

**300-TP-002-001**

# **Database Descriptions for Synergy III**

**Technical Paper**

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## **Abstract**

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This document provides “as-built” database design and database schema of the subsystem databases that are part of the Synergy III delivery. This document will be superceded when formal delivery of the DID 311 Database Subsystem Specification is made.

**Keywords:** data, database, data-model

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# **Contents**

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## **Abstract**

### **1. Introduction**

|     |                   |     |
|-----|-------------------|-----|
| 1.1 | Purpose.....      | 1-1 |
| 1.2 | Organization..... | 1-1 |

### **2. Data Pool**

|       |  |      |
|-------|--|------|
| 2.1   | Database Overview / Schema Change Summary.....       | 2-1  |
| 2.1.1 | Physical Data Model Entity Relationship Diagram..... | 2-3  |
| 2.1.2 | Database Table Specifications .....                  | 2-4  |
| 2.1.3 | Rules .....  | 2-31 |
| 2.1.4 | Defaults .....                                       | 2-32 |
| 2.1.5 | Views .....  | 2-32 |
| 2.1.6 | Integrity Constraints .....                          | 2-32 |
| 2.1.7 | Triggers .....                                       | 2-35 |
| 2.1.8 | Stored Procedures .....                              | 2-36 |

### **3. Order Manager**

|       |  |      |
|-------|--|------|
| 3.1   | Design Overview .....                                | 3-1  |
| 3.1.1 | Physical Data Model Entity Relationship Diagram..... | 3-1  |
| 3.1.2 | Database Table Specifications .....                  | 3-2  |
| 3.1.3 | Column Specifications .....                          | 3-7  |
| 3.1.4 | Column Domains .....                                 | 3-15 |
| 3.1.5 | Column Default Values.....                           | 3-15 |
| 3.1.6 | Referential Integrity Rules.....                     | 3-15 |
| 3.1.7 | Check Constraints .....                              | 3-15 |
| 3.1.8 | Views .....  | 3-16 |
| 3.1.9 | Declarative Integrity Constraints .....              | 3-16 |

|  |      |
|--|------|
| 3.1.10 Triggers .....                            | 3-18 |
| 3.1.11 Order Manager Stored Procedures.....      | 3-18 |
| 3.1.12 MSS New Stored Procedures.....            | 3-21 |
| 3.1.13 SDSRV Stored Procedure Modification ..... | 3-21 |
| 3.2 Flat File Usage .....                        | 3-22 |
| 3.2.1 File Descriptions .....                    | 3-22 |
| 3.2.2 Field Specifications.....                  | 3-22 |
| 3.2.3 Domain Definitions.....                    | 3-22 |

## **4. Spatial Subscription Server**

|  |      |
|--|------|
| 4.1 Database Overview .....                                | 4-1  |
| 4.1.1 Physical Data Model Entity Relationship Diagram..... | 4-1  |
| 4.1.2 Tables.....  | 4-2  |
| 4.1.3 Rules .....  | 4-15 |
| 4.1.4 Defaults .....                                       | 4-15 |
| 4.1.5 Views .....  | 4-15 |
| 4.1.6 Integrity Constraints .....                          | 4-16 |
| 4.1.7 Triggers.....  | 4-18 |
| 4.1.8 Stored Procedures .....                              | 4-18 |

## **5. Management Subsystem (MSS)**

|  |      |
|--|------|
| 5.1 Database Overview .....                                | 5-1  |
| 5.1.1 Physical Data Model Entity Relationship Diagram..... | 5-2  |
| 5.1.2 Tables.....  | 5-3  |
| 5.1.3 Columns .....  | 5-12 |
| 5.1.4 Column Domains .....                                 | 5-25 |
| 5.1.5 Rules .....  | 5-25 |
| 5.1.6 Defaults .....                                       | 5-25 |
| 5.1.7 Views .....  | 5-26 |
| 5.1.8 Integrity Constraints .....                          | 5-26 |
| 5.1.9 Triggers.....  | 5-26 |
| 5.1.10 Stored Procedures .....                             | 5-26 |
| 5.2 Flat File Usage .....                                  | 5-27 |

|       |                            |      |
|-------|----------------------------|------|
| 5.2.1 | File Descriptions .....    | 5-27 |
| 5.2.2 | Block Specifications ..... | 5-30 |
| 5.2.3 | Field Specifications.....  | 5-30 |
| 5.2.4 | Domain Definitions.....    | 5-31 |

## **List of Figures**

|     |  |     |
|-----|--|-----|
| 2-1 | Data Pool ERD Key .....                  | 2-4 |
| 3-1 | Order Manager ERD Key .....              | 3-1 |
| 4-1 | Spatial Subscription Server ERD Key..... | 4-1 |
| 5-1 | Sample ERD.....                          | 5-2 |

## **List of Tables**

|      |                                   |      |
|------|-----------------------------------|------|
| 2-1  | DICollectionGroup.....            | 2-4  |
| 2-2  | DICollections .....               | 2-5  |
| 2-3  | DIThemes.....                     | 2-6  |
| 2-4  | DIGranuleThemeXref .....          | 2-6  |
| 2-5  | DIGranuleSubscription .....       | 2-6  |
| 2-6  | DIGranules .....                  | 2-7  |
| 2-7  | DIGranuleExpirationPriority ..... | 2-8  |
| 2-8  | DIMeasuredParameter .....         | 2-8  |
| 2-9  | DIBrowse .....                    | 2-9  |
| 2-10 | DIBrowseFile .....                | 2-9  |
| 2-11 | DIGranuleBrowseXref .....         | 2-9  |
| 2-12 | DIFile .....                      | 2-10 |
| 2-13 | DIBoundingRectangle.....          | 2-10 |
| 2-14 | DIGPolygon .....                  | 2-10 |
| 2-15 | DIOrbitCalculatedSpatial.....     | 2-11 |
| 2-16 | DIOrbitPolygons .....             | 2-11 |
| 2-17 | DIPlatInstrCode .....             | 2-11 |

|      |                                  |      |
|------|----------------------------------|------|
| 2-18 | DIState .....                    | 2-12 |
| 2-19 | DIConfig .....                   | 2-12 |
| 2-20 | DIProcesses .....                | 2-13 |
| 2-21 | DIFilesToDelete .....            | 2-13 |
| 2-22 | DICleanupParameters .....        | 2-14 |
| 2-23 | DI(TempGrans) .....              | 2-14 |
| 2-24 | DI(TempPhantoms) .....           | 2-14 |
| 2-25 | DIProcAttributes .....           | 2-14 |
| 2-26 | DIActiveInsertQueue .....        | 2-15 |
| 2-27 | DIActiveInsertProcesses .....    | 2-16 |
| 2-28 | DI(FtpAccessLog) .....           | 2-18 |
| 2-29 | DI(WebAccessLog) .....           | 2-18 |
| 2-30 | DIAccessRollup .....             | 2-19 |
| 2-31 | DIGranuleAccess .....            | 2-19 |
| 2-32 | DIDimensionGroupESDT .....       | 2-20 |
| 2-33 | DIDimensionDayNight .....        | 2-20 |
| 2-34 | DIDimensionTimeOfDay .....       | 2-21 |
| 2-35 | DIDimensionMP .....              | 2-22 |
| 2-36 | DIDimensionScienceQA .....       | 2-22 |
| 2-37 | DIDimensionMPScienceQAXref ..... | 2-22 |
| 2-38 | DIDimensionTemporal .....        | 2-23 |
| 2-39 | DIDimensionSpatial .....         | 2-24 |
| 2-40 | DIDimensionPolygonXref .....     | 2-25 |
| 2-41 | DIFactGroupESDT .....            | 2-25 |
| 2-42 | DIFactDayNight .....             | 2-25 |
| 2-43 | DIFactTimeOfDay .....            | 2-26 |
| 2-44 | DIFactQA .....                   | 2-26 |
| 2-45 | DIFactTemporal .....             | 2-26 |

|      |                                |      |
|------|--------------------------------|------|
| 2-46 | DIFactSpatial .....            | 2-26 |
| 2-47 | DIdentifier.....               | 2-27 |
| 2-48 | EcDbDatabaseVersions .....     | 2-28 |
| 2-49 | DIUpdGranulesTemp.....         | 2-28 |
| 2-50 | DIXMLFilesToInsert .....       | 2-29 |
| 2-51 | DIECSIdsToInsert.....          | 2-29 |
| 2-52 | DIHEGLookup.....               | 2-29 |
| 2-53 | DICartOrder .....              | 2-30 |
| 2-54 | DICartOrderitem .....          | 2-31 |
| 2-55 | DIStatGroupESDT .....          | 2-31 |
| 2-56 | DIStatGroupESDT .....          | 2-31 |
| 2-55 | List of Rules.....             | 2-31 |
| 2-56 | List of Defaults .....         | 2-32 |
| 2-57 | List of Triggers .....         | 2-36 |
| 2-58 | List of Stored Procedures..... | 2-36 |
| 3-1  | Database Tables .....          | 3-2  |
| 3-2  | OmActionQueue .....            | 3-3  |
| 3-3  | OmBundlingOrder .....          | 3-3  |
| 3-4  | OmConfigParameter .....        | 3-4  |
| 3-5  | OmExplanation .....            | 3-4  |
| 3-6  | OmGranule.....                 | 3-4  |
| 3-7  | OmMediaType .....              | 3-5  |
| 3-8  | OmNotification .....           | 3-5  |
| 3-9  | OmOperatorIntervention.....    | 3-5  |
| 3-10 | OmRequest.....                 | 3-6  |
| 3-11 | OmRequestInterventions .....   | 3-6  |
| 3-12 | OmRequestOptions .....         | 3-6  |
| 3-13 | OmQueue .....                  | 3-6  |
| 3-14 | OmStatus.....                  | 3-7  |
| 3-15 | OmSubSettingInfo .....         | 3-7  |

|      |   |      |
|------|---|------|
| 3-16 | EcDbDatabaseVersions .....                        | 3-7  |
| 3-17 | Order Manager Database Column Specification ..... | 3-8  |
| 3-18 | Order Manager Database Column Defaults .....      | 3-15 |
| 3-19 | Order Manager Check Constraints .....             | 3-15 |
| 3-20 | Order Manager Database Triggers.....              | 3-18 |
| 3-21 | Summary List of MSS Triggers.....                 | 3-18 |
| 3-22 | List of Stored Procedures.....                    | 3-19 |
| 3-23 | MSS Stored Procedures .....                       | 3-21 |
| 3-24 | SDSRV Stored Procedures .....                     | 3-22 |
| 4-1  | EcNbActionDefinition .....                        | 4-2  |
| 4-2  | EcNbActionQueue .....                             | 4-2  |
| 4-3  | EcNbActionQueueFront .....                        | 4-3  |
| 4-4  | EcNbActionQueueLog.....                           | 4-3  |
| 4-5  | EcNbActionQueueRear.....                          | 4-3  |
| 4-6  | EcNbDistribution .....                            | 4-4  |
| 4-7  | EcNbDpEventDetails.....                           | 4-4  |
| 4-8  | EcNbEventDefinition.....                          | 4-5  |
| 4-9  | EcNbEventMetadataAttrDef.....                     | 4-5  |
| 4-10 | EcNbEventMetadataDate.....                        | 4-5  |
| 4-11 | EcNbEventMetadataFloat .....                      | 4-6  |
| 4-12 | EcNbEventMetadataString .....                     | 4-6  |
| 4-13 | EcNbEventMetadataInteger.....                     | 4-6  |
| 4-14 | EcNbEventMetadataNose .....                       | 4-7  |
| 4-15 | EcNbEventTruth .....                              | 4-7  |
| 4-16 | EcNbMatchingExpNextId .....                       | 4-7  |
| 4-17 | EcNbMatchingExpression .....                      | 4-8  |
| 4-18 | EcNbNoseMatchingExpression .....                  | 4-8  |
| 4-19 | EcNbNotificationAction .....                      | 4-8  |

|      |                                     |      |
|------|-------------------------------------|------|
| 4-20 | EcNbDpAction.....                   | 4-9  |
| 4-21 | EcNbOrderAction .....               | 4-9  |
| 4-22 | EcNbQueueInfo .....                 | 4-10 |
| 4-23 | EcNbSbConfiguration.....            | 4-10 |
| 4-24 | EcNbSpatialMatchingExpression ..... | 4-10 |
| 4-25 | EcNbSubEventQueueFront.....         | 4-10 |
| 4-26 | EcNbSubEventQueueLog.....           | 4-11 |
| 4-27 | EcNbSubEventQueueRear.....          | 4-11 |
| 4-28 | EcNbSubMatchExp_XREF .....          | 4-11 |
| 4-29 | EcNbSubMatchingExpDate.....         | 4-11 |
| 4-30 | EcNbSubMatchingExpFloat .....       | 4-12 |
| 4-31 | EcNbSubMatchingExpInteger .....     | 4-12 |
| 4-32 | EcNbSubMatchingExpString.....       | 4-12 |
| 4-33 | EcNbSubscribedEventQueue.....       | 4-13 |
| 4-34 | EcNbSubscription .....              | 4-13 |
| 4-35 | EcNbSubscriptionNextId .....        | 4-14 |
| 4-36 | EcNbActionNextId .....              | 4-14 |
| 4-37 | EcNbDeleteRequestQueue.....         | 4-14 |
| 4-38 | EcNbDeleteRequestQueueLock .....    | 4-14 |
| 4-39 | EcDbDatabaseVersions .....          | 4-15 |
| 4-40 | List of Triggers .....              | 4-18 |
| 4-41 | List of Stored Procedures.....      | 4-19 |
| 5-1  | Data Table Listing .....            | 5-3  |
| 5-2  | EcAcOrder .....                     | 5-4  |
| 5-3  | EcAcOrderId .....                   | 5-5  |
| 5-4  | EcAcRequest.....                    | 5-5  |
| 5-5  | EcAcRequestId .....                 | 5-6  |
| 5-6  | EcDbDatabaseVersions .....          | 5-6  |

|      |  |      |
|------|--|------|
| 5-7  | EcMsDAACSites .....                      | 5-7  |
| 5-8  | MsAcAffiliationCode .....                | 5-7  |
| 5-9  | MsAcAsterCategory .....                  | 5-7  |
| 5-10 | MsAcDAACCCode .....                      | 5-7  |
| 5-11 | MsAcInternetAffiliationCode .....        | 5-7  |
| 5-12 | MsAcMediaFormatCode .....                | 5-8  |
| 5-13 | MsAcMediaTypeCode .....                  | 5-8  |
| 5-14 | MsAcOpPrivilege .....                    | 5-8  |
| 5-15 | MsAcPriorityCode .....                   | 5-8  |
| 5-16 | MsAcResearchFieldCode .....              | 5-8  |
| 5-17 | MsAcStatusCode .....                     | 5-9  |
| 5-18 | MsAcUsrAudit .....                       | 5-9  |
| 5-19 | MsAcUsrProfile .....                     | 5-9  |
| 5-20 | EcAcAddress .....                        | 5-11 |
| 5-21 | role_to_cots .....                       | 5-12 |
| 5-22 | MSS Database Column Specifications ..... | 5-12 |
| 5-23 | Trigger Listing .....                    | 5-26 |
| 5-24 | Procedure Listing .....                  | 5-27 |
| 5-25 | Flat File Descriptions .....             | 5-28 |
| 5-26 | Flat File Block Descriptions .....       | 5-30 |
| 5-27 | Flat File Field Specifications .....     | 5-30 |
| 5-28 | Flat File Domain Definitions .....       | 5-31 |

## **Appendix A. Data Pool Subsystem Entity Relationship Diagram**

## **Appendix B. Order Manager Entity Relationship Diagram**

## **Appendix C. Spatial Subscription Server Entity Relationship Diagram**

## **Appendix D. MSS Entity Relationship Diagram**

# **1. Introduction**

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## **1.1 Purpose**

The purpose of this document is to provide an interim documentation source for the database and schema specifications that were added and/or modified for the Synergy III deployment. Contents of this document will subsequently be captured in the appropriate Subsystem Database Design and Database Schema Specification documents (DID 311). Until formal delivery of DID 311, this document can be used to support the database administrators, as well as those who support ongoing installation and operational activities (e.g., configuration management, data administration, system installation and maintenance)

## **1.2 Organization**

This paper is organized as follows:

- Section 1: Introduction
- Section 2: Data Pool
- Section 3: Order Manager
- Section 4: Spatial Subscription Server
- Section 5: Miscellaneous (MSS)

Appendices are included to capture the Entity Relationship Diagram for the corresponding database.

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## 2. Data Pool

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### 2.1 Database Overview / Schema Change Summary

The Data Pool (DPL) database implements the large majority of the persistent data requirements for the DPL subsystem. The database is designed in such a manner as to satisfy business policy while maintaining data integrity and consistency. Database tables are implemented using the Sybase Relational Database Management system (RDBMS).

A summary of the changes made to the Data Pool Database for Synergy III are as follows:

1. DICollectionGroup
  - Added ecsFlag to indicate whether a collection is an ECS collection or a nonECS collection
  - Added insertTime and lastUpdate, to track changes to this table
2. DICollections
  - Changed esdtValidationFlag to insertEnabledFlag
  - Added convertEnabledFlag (for HEG conversions via Web Access)
  - Added bulkExportedFlag (for ECHO Access to Data Pool capability; used by bulkURL utility)
  - Added insertTime and lastUpdate, to track changes to this table
3. Added DIThemes - new table to support Themes
4. Added DIGranuleThemeXref - new table to support Themes
5. DIGranules
  - GranuleId no longer corresponds to the dbId in the SDSRV database
  - Added ecsId - this corresponds to the dbId in the SDSRV database for ECS granules; NULL for nonECS granules
  - Added externalId - used for nonECS granules; NULL for ECS granules
  - Added collectionId
  - Changed SizeMBECSDataGranule to sizeMB (now used for both ECS and nonECS granules)
  - Changed dlInsertTime to insertTime
  - Added lastUpdate to track changes to this table

6. DlBrowse

BrowseId no longer corresponds to the dbId in the SDSRV database

Added ecsId - this corresponds to the dbId in the SDSRV database for ECS granules; NULL for nonECS granules

Added external Id - used for nonECS granules; NULL for ECS granules

Changed dlInsertTime to insertTime

Added lastUpdate to track changes to this table

7. DlActionConfig renamed to DlConfig (has same schema; new parameter rows have been added)

8. DlFilesToDelete

GranuleId and browseId no longer correspond to the dbId in the SDSRV database

Added ecsId - this corresponds to the dbId in the SDSRV database for ECS granules; NULL for nonECS granules

Added ShortName

Added VersionId

9. Added DlTempPhantoms - new "permanent temporary" table, to support Data Pool Validation

10. DlInsertActionQueue

Changed actionQueueId to insQueueId

Changed dbId to ecsId

Added inCacheFlag (NOTE: this column was added to the 6A06 baseline with Patch\_6A.06\_DPL.05A)

Added actionSource - supports batch inserts

Added dispatchPriority - supports batch inserts

Added xmlFileName - supports inserts of nonECS granules

Added themeId - supports themes

Added batchLabel - supports batch inserts

11. DlActiveInsertProcesses

Removed subId

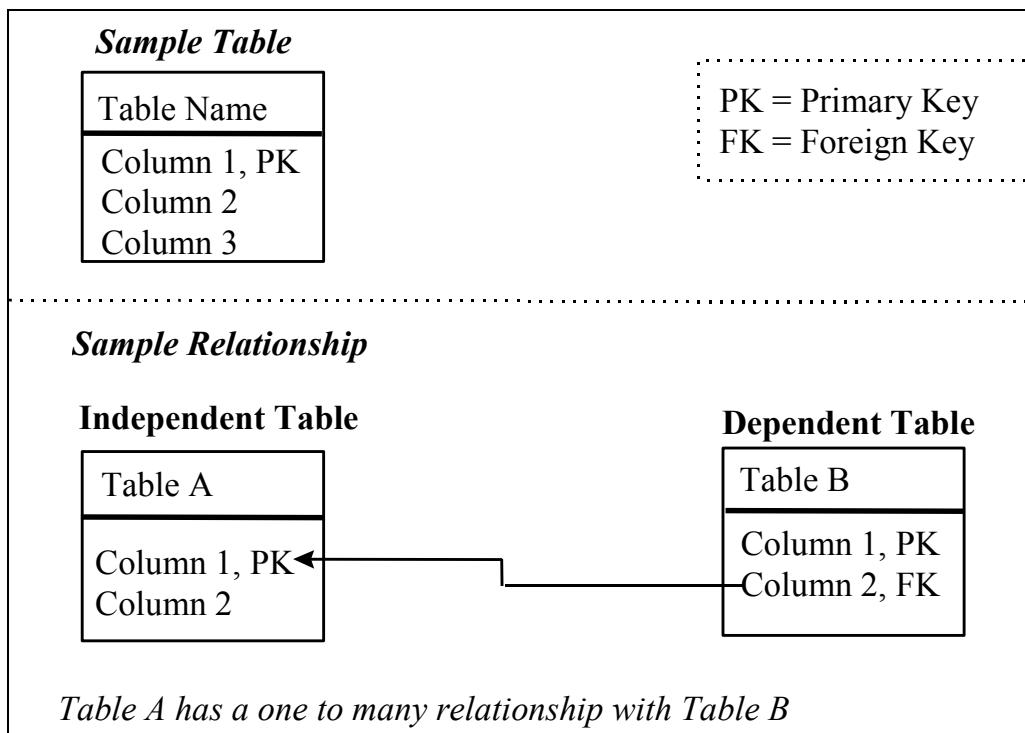
Changed dbId to ecsId

Added xmlFileName - supports inserts of nonECS granules

12. Replaced DIIdentifier with DIIdentifierMP, DIIdentifierScienceQA, and DIIdentifierMPScienceQAXref (for performance reasons)
13. Added DIIdentifier table
14. Added DIUpdGranulesTemp - new "permanent temporary" table, supports the Update Granule Expiration Utility
15. Added DIXMLFilesToInsert - new "permanent temporary" table, supports batch inserts
16. Added DIECSDsToInsert - new "permanent temporary" table, supports batch inserts
17. Added DIHEGLookup - new table, supports HEG conversions via Data Pool Web Access
18. Added DICartOrder - new table, supports HEG conversions via Data Pool Web Access
19. Added DICartOrderItem - new table, supports HEG conversions via Data Pool Web Access
20. Added DIStatGroupESDT – new table, supports Data Pool Web Access
21. Added DIStatESDT – new table, supports Data Pool Web Access
22. Added granIdentifier column to the DIActiveInsertProcesses table – supports Data Pool insert raise condition with browse.

### **2.1.1 Physical Data Model Entity Relationship Diagram**

The Entity Relationship Diagram (ERD) presents a schematic depiction of the DPL physical data model. The ERDs presented here for the DPL database were produced using the Power Designer Data Architect Computer Aided Software Engineering (CASE) tool. ERDs represent the relationship between entities or database tables. The key for the symbols used in the ERDs is defined in Figure 2-1. The ERD for the DPL database is shown in Appendix A.



**Figure 2-1. Data Pool ERD Key**

### 2.1.2 Database Table Specifications

A brief definition of each of the tables in the DPL database is included in this section.

Table 2-1, DICollectionGroup, contains information about Data Pool collection groups. Collection groups are based on the ECS Bulk Metadata Generation Tool collection groups, and represent groupings of ECS collections by instrument and mission (e.g. MOAT).

**Table 2-1. DICollectionGroup**

| Name               | Type         | PK  | Mandatory | Description   |
|--------------------|--------------|-----|-----------|---|
| groupId            | char(4)      | Yes | Yes       | ECS collection group ID   |
| collGrpDescription | varchar(255) | No  | No        | Description of an ECS collection group.   |
| ecsFlag            | char(1)      | No  | Yes       | Flag uses to identify whether the collection group is ecs or non-ecs.<br>Y – ECS<br>N – Non-ECS |
| insertTime         | datetime     | No  | No        | The time that the collection group inserted.  |
| lastUpdate         | datetime     | No  | No        | The time that the collection group last updated.  |

Table 2-2, DICollections, contains information about Data Pool collections. It includes the short name and version of the collection and flags to determine whether data from the collection may be stored in the Data Pool.

**Table 2-2. DICollections**

| Name                  | Type         | PK  | Mandatory | Description  |
|-----------------------|--------------|-----|-----------|--|
| collectionId          | ID           | Yes | Yes       | identifier for each collection   |
| ShortName             | char(8)      | No  | Yes       | ECS collection short name  |
| VersionId             | tinyint      | No  | Yes       | Version of ECS collection  |
| CollectionDescription | varchar(255) | No  | No        | description of ECS collection  |
| groupId               | char(4)      | No  | Yes       | ECS collection group ID  |
| spatialSearchType     | varchar(40)  | No  | Yes       | Type of spatial search associated with the collection (e.g. Orbit, GPolygon, Rectangle)  |
| exclusionSCFlag       | char(1)      | No  | Yes       | Flag used to determine whether the collection is allowed to insert Science and Metadata to Data Pool or Metadata only.<br>Y – Metadata only<br>N – Science and Metadata            |
| insertEnabledFlag     | char(1)      | No  | Yes       | Flag use to determine whether inserting granules from this collection are eligible for insertion in the Data Pool.<br>Y – allow Data Pool insert<br>N – not allow Data Pool insert |
| convertEnabledFlag    | char(1)      | No  | Yes       | Flag use to determine whether the collection is allowed for HEG conversion.<br>Y – allow HEG conversion<br>N – not allow HEG conversion  |
| bulkExportedFlag      | Char(1)      | No  | Yes       | Flag uses to determine whether the collection allows for exporting metadata by the Echo Access to DataPool utility.  |
| insertTime            | datetime     | No  | No        | The time that the collection inserted.   |
| lastUpdate            | datetime     | No  | No        | The time that the collection last updated.   |

Table 2-3, DIThemes, contains information about Data Pool themes. It includes the theme name and flags to determine whether data from the theme allow to stored in the Data Pool or the theme allows for web drill down.

**Table 2-3. DIThemes**

| Name              | Type         | PK  | Mandatory | Description  |
|-------------------|--------------|-----|-----------|--|
| themeld           | ID           | Yes | Yes       | The unique ID that identifies a data pool theme.   |
| name              | varchar(40)  | No  | Yes       | The column contains the theme name.  |
| themeDescription  | varchar(255) | No  | No        | Description of DPL themes  |
| insertEnabledFlag | char(1)      | No  | Yes       | Flag use to determine whether inserting granules from this theme are eligible for insertion in the Data Pool.<br>Y – allow Data Pool insert<br>N – not allow Data Pool insert        |
| webVisibleFlag    | char(1)      | No  | Yes       | Flag use to determine whether granules from this theme are eligible for web drill down in Data Pool.<br>Y – allow Data Pool Web Drill Down<br>N - not allow Data Pool Web Drill Down |
| insertTime        | datetime     | No  | No        | Time which the theme inserted in Data Pool   |
| lastUpdate        | datetime     | No  | No        | Time which the theme information last updated.   |

Table 2-4, DIGranuleThemeXref, contains cross-reference information between Data Pool science granules and their associated themes.

**Table 2-4. DIGranuleThemeXref**

| Name      | Type | PK  | Mandatory | Description  |
|-----------|------|-----|-----------|--|
| granuleId | ID   | Yes | Yes       | The unique ID which identifies the granule in DPL. |
| themeld   | ID   | Yes | Yes       | The unique ID that identifies a data pool theme.   |

Table 2-5, DIGranuleSubscription, provides a cross-reference that relates each granule in the Data Pool to the list of subscriptions that caused its insertion.

**Table 2-5. DIGranuleSubscription**

| Name  | Type | PK  | Mandatory | Description  |
|-------|------|-----|-----------|--|
| subId | int  | Yes | Yes       | The ID of a subscription that caused the insertion of the granule in the Data Pool. This is a cross-reference to the Spatial Subscription Server database. |
| dbId  | ID   | No  | Yes       | The unique ID which identifies the granule.  |

Table 2-6, DIGranules, is the central table of the Data Pool database. It contains the core attributes for all science granules in the Data Pool. It also includes the range date and time attributes for each granule.

**Table 2-6. DIGranules**

| Name               | Type        | PK  | Mandatory | Description  |
|--------------------|-------------|-----|-----------|--|
| granuleId          | ID          | Yes | Yes       | The unique ID which identifies the granule in DPL.   |
| externalId         | varchar(80) | No  | No        | The ID which identifies the Non-ECS granule.   |
| ecsId              | ID          | No  | No        | The unique ID which identifies the granule. It matches the dbID in the ECS Science Data Server (SDSRV) database. |
| collectionId       | ID          | No  | Yes       | The ID which identifies the ECS collection in DPL.   |
| ShortName          | char(8)     | No  | Yes       | ECS collection short name  |
| VersionId          | tinyint     | No  | Yes       | Version of the ECS collection  |
| RangeBeginningDate | datetime    | No  | No        | Date when the granule acquisition started  |
| RangeBeginningTime | Varchar(20) | No  | No        | Time when the granule acquisition started  |
| RangeEndingDate    | datetime    | No  | No        | Date when the granule acquisition ended  |
| RangeEndingTime    | varchar(20) | No  | No        | Time when the granule acquisition ended  |
| DayNightFlag       | char(5)     | No  | No        | Flag indicating whether the granule was acquired during the day, the night, or both                              |
| sizeMB             | float       | No  | No        | The granule size in MB   |
| ecsInsertTime      | datetime    | No  | No        | Time when the granule was inserted into ECS  |
| insertTime         | datetime    | No  | No        | Time when the granule was inserted into Data Pool  |
| lastUpdate         | datetime    | No  | No        | Time when the granule metadata was last updated.   |

Table 2-7, DIGranuleExpirationPriority, contains the expiration date and retention priority for each granule in Data Pool.

**Table 2-7. DIGranuleExpirationPriority**

| Name              | Type     | PK  | Mandatory | Description                                       |
|-------------------|----------|-----|-----------|---|
| granuleId         | ID       | Yes | Yes       | The unique ID which identifies the granule        |
| expirationDate    | datetime | No  | Yes       | Date when the granule expired.                    |
| retentionPriority | smallint | No  | Yes       | Priority of the granule in the Data Pool database |

Table 2-8, DIMeasuredParameter, contains one row for each measured parameter associated with a granule in the Data Pool. All data in this table are copied from the DsMdMeasureParameter table in the ECS SDSRV database.

**Table 2-8. DIMeasuredParameter**

| Name                       | Type         | PK  | Mandatory | Description                                |
|----------------------------|--------------|-----|-----------|--|
| granuleId                  | ID           | Yes | Yes       | The unique ID which identifies the granule |
| ParameterName              | varchar(40)  | Yes | Yes       | Refer to technical paper 420-TP-020        |
| ScienceQualityflag         | varchar(25)  | No  | No        | Refer to technical paper 420-TP-020        |
| OperationalQualityFlag     | varchar(20)  | No  | No        | Refer to technical paper 420-TP-020        |
| AutomaticQualityFlag       | varchar(64)  | No  | No        | Refer to technical paper 420-TP-020        |
| ScienceQualityFlagExplan   | varchar(255) | No  | No        | Refer to technical paper 420-TP-020        |
| OperationalQualityFlagExpl | varchar(255) | No  | No        | Refer to technical paper 420-TP-020        |
| QAPercentMissingData       | float        | No  | No        | Refer to technical paper 420-TP-020        |
| QAPercentOutOfBoundsD      | float        | No  | No        | Refer to technical paper 420-TP-020        |
| QAPercentInterpolatedDat   | float        | No  | No        | Refer to technical paper 420-TP-020        |
| QAPercentCloudCover        | float        | No  | No        | Refer to technical paper 420-TP-020        |

Table 2-9, DIBrowse, contains information about Browse granules in the Data Pool.

**Table 2-9. DIBrowse**

| Name              | Type         | PK  | Mandatory | Description  |
|-------------------|--------------|-----|-----------|--|
| browseld          | ID           | Yes | Yes       | The unique ID which identifies the browse granule  |
| externalId        | varchar(80)  | No  | No        | The ID that identifies the Non-ECS browse granule.   |
| ecsId             | ID           | No  | No        | The ID that identifies the ECS browse granule. It matches the browse id in SDSRV database. |
| browseDescription | varchar(255) | No  | No        | Description of the browse granule  |
| ecsInsertTime     | datetime     | No  | No        | Time the browse granule was inserted into ECS.   |
| insertTime        | datetime     | No  | No        | Time the browse granule was inserted into Data Pool.                                       |
| lastUpdate        | datetime     | No  | No        | Time the browse granule was last updated.  |

Table 2-10, DIBrowseFile, contains information about Browse files in the Data Pool.

**Table 2-10. DIBrowseFile**

| Name          | Type          | PK  | Mandatory | Description   |
|---------------|---------------|-----|-----------|---|
| browseld      | ID            | Yes | Yes       | The unique ID which identifies the browse                                       |
| fileName      | varchar(80)   | No  | Yes       | The file name of the browse granule in the Data Pool.                           |
| directoryPath | varchar(80)   | No  | Yes       | Path Name of the browse granule files relative to the Data Pool root directory. |
| fileType      | varchar(10)   | No  | No        | The type of file. The valid file types for a browse granule is BROWSE.          |
| fileSize      | numeric(16,0) | No  | No        | The size of the browse file stored on the Data Pool disk.                       |

Table 2-11, DIGranuleBrowseXref, contains cross-reference information between Data Pool science granules and their associated browse granules.

**Table 2-11. DIGranuleBrowseXref**

| Name      | Type | PK  | Mandatory | Description                                |
|-----------|------|-----|-----------|--|
| granuleId | ID   | Yes | Yes       | The unique ID which identifies the granule |
| browseld  | ID   | Yes | Yes       | The unique ID which identifies the browse. |

Table 2-12, DIFile, contains information about science files in the Data Pool.

**Table 2-12. *DIFile***

| Name          | Type          | PK  | Mandatory | Description   |
|---------------|---------------|-----|-----------|---|
| directoryPath | varchar(80)   | Yes | Yes       | Path name of the science granule or metadata file relative to the Data Pool root directory.   |
| fileName      | varchar(80)   | Yes | Yes       | Name of the science granule or metadata file.   |
| granuleId     | ID            | No  | Yes       | The unique ID which identifies the granule  |
| fileType      | varchar(10)   | No  | No        | The type of the file. The valid file types for a science granule are: <ul style="list-style-type: none"> <li>• SCIENCE</li> <li>• METADATA</li> </ul> |
| fileSize      | numeric(16,0) | No  | No        | The size of the file in Data Pool.  |

Table 2-13, *DIBoundingRectangle*, contains spatial information about granules whose spatial coverage is LLBOX.

**Table 2-13. *DIBoundingRectangle***

| Name              | Type  | PK  | Mandatory | Description  |
|-------------------|-------|-----|-----------|--|
| granuleId         | ID    | Yes | Yes       | The unique ID which identifies the granule                           |
| BoundingRectangle | llbox | No  | Yes       | A SQS type llbox representation of the spatial area for the granule. |

Table 2-14, *DIGPolygon*, contains spatial information about granules whose spatial coverage is a gpolygon.

**Table 2-14. *DIGPolygon***

| Name              | Type     | PK  | Mandatory | Description   |
|-------------------|----------|-----|-----------|---|
| granuleId         | ID       | Yes | Yes       | The unique ID which identifies the granule                              |
| GpolygonContainer | gpolygon | No  | Yes       | A SQS type gpolygon representation of the spatial area for the granule. |

Table 2-15, *DOIOrbitCalculatedSpatial*, contains spatial information about granules with nominal orbital spatial coverage.

**Table 2-15. DIOrbitCalculatedSpatial**

| Name          | Type     | PK  | Mandatory | Description  |
|---------------|----------|-----|-----------|--|
| granuleId     | ID       | Yes | Yes       | The unique ID which identifies the granule   |
| PathNo        | smallint | Yes | Yes       | Orbit number.  |
| StartBlock    | smallint | Yes | Yes       | The ordinal number of the polygon where granule coverage starts. It points to the polygons covering this orbit in DIOrbitPolygons. |
| EndBlock      | smallint | No  | Yes       | The ordinal number of the polygon where granule coverage ends.   |
| platInstrCode | tinyint  | Yes | Yes       | A code identifying a particular platform and instrument.   |

Table 2-16, DIOrbitPolygons, contains a series of orbit polygons for a platform and instrument combination. The data in this table is static and applies only to MISR data.

**Table 2-16. DIOrbitPolygons**

| Name          | Type     | PK  | Mandatory | Description   |
|---------------|----------|-----|-----------|---|
| platInstrCode | tinyint  | Yes | Yes       | The ID of an entry in the DIPlatInstrCode table applicable to an orbit polygon. |
| PathNo        | smallint | Yes | Yes       | The path which the granule passes through.                                      |
| SequenceNo    | smallint | Yes | Yes       | The sequence of the polygon for a MISR orbit granule.                           |
| Orbit         | polygon  | No  | Yes       | A SQS polygon type representation of an orbit spatial coverage.                 |

Table 2-17, DIPlatInstrCode, contains static look up information regarding the platform and instrument names for a given platInstrCode.

**Table 2-17. DIPlatInstrCode**

| Name              | Type        | PK  | Mandatory | Description   |
|-------------------|-------------|-----|-----------|---|
| platInstrCode     | tinyint     | Yes | Yes       | The ID of an entry in the DIPlatInstrCode table applicable to an orbit polygon. |
| platformShortName | varchar(20) | No  | Yes       | The short name of a platform.   |
| instrumentName    | varchar(80) | No  | Yes       | The name of an instrument for the platform.                                     |

Table 2-18, DIState, contains information about the current state of the Data Pool. Currently, the only state information is whether the Data Pool has available free space.

**Table 2-18. DIState**

| Name            | Type     | PK  | Mandatory | Description  |
|-----------------|----------|-----|-----------|--|
| NoFreeSpaceFlag | char(1)  | Yes | Yes       | Flag use to indicate whether the Data Pool is currently out of free space.<br>The valid values are:<br>Y – No Space in the Data Pool disk<br>N – Space available in the Data Pool disk |
| lastUpdate      | datetime | No  | No        | The last time that the flag is updated.  |

Table 2-19, DIConfig, contains parameter names and values for all Data Pool configuration parameters which are configurable through the Data Pool Maintenance GUI.

**Table 2-19. DIConfig**

| Name                 | Type         | PK  | Mandatory | Description  |
|----------------------|--------------|-----|-----------|--|
| parameterName        | varchar(50)  | Yes | Yes       | The name of the configuration parameter  |
| parameterDescription | varchar(255) | No  | No        | The description of the parameter   |
| parameterType        | char(1)      | No  | Yes       | The data type of the parameter. The valid values are:<br>I – integer<br>C – character<br>F – float |
| intValue             | int          | No  | No        | The value of the parameter which has data type of integer.   |
| charValue            | varchar(255) | No  | No        | The value of the parameter which has data type of character.                                       |
| floatValue           | float        | No  | No        | The value of the parameter which has data type of float.   |

Table 2-20, DIProcesses, contains the status of each insert process.

**Table 2-20. DIProcesses**

| Name        | Type        | PK  | Mandatory | Description   |
|-------------|-------------|-----|-----------|---|
| processName | varchar(30) | Yes | Yes       | The type of Data Pool process whose state is reflected by this row. The valid values are:<br>INSERT<br>DISTRIBUTION (for future releases)         |
| suspendFlag | char(1)     | No  | No        | Flag used to indicate whether the type of process is suspended. The valid values are:<br>Y – process is suspended<br>N – process is not suspended |
| lastUpdate  | datetime    | No  | No        | The last time that the suspendFlag was updated.   |

Table 2-21, DIFilesToDelete, is used by the Data Pool Cleanup Utility as temporary storage for all granules which get deleted from the Data Pool inventory through a Data Pool clean up session.

**Table 2-21. DIFilesToDelete**

| Name          | Type        | PK | Mandatory | Description  |
|---------------|-------------|----|-----------|--|
| granuleId     | ID          | No | No        | The unique ID which identifies the science granule   |
| browselId     | ID          | No | No        | The unique ID which identifies the browse granule.   |
| fileName      | varchar(80) | No | Yes       | The file name for a science, metadata or browse file   |
| fileSize      | int         | No | Yes       | The size of the file   |
| directoryPath | varchar(80) | No | Yes       | Path Name of the browse, science, or metadata granule files relative to the Data Pool root directory.            |
| state         | tinyint     | No | Yes       | The status of cleaning up a granule.<br>0 – successfully deleted<br>1 – not deleted                              |
| ecsId         | ID          | No | No        | The unique ID which identifies the granule. It matches the dbID in the ECS Science Data Server (SDSRV) database. |
| ShortName     | char(8)     | No | No        | ECS collection short name  |
| VersionId     | tinyint     | No | No        | Version of the ECS collection  |

Table 2-22, DICleanupParameters, contains information about the command line parameters that are passed to the Data Pool Cleanup Utility.

**Table 2-22. DIcleanupParameters**

| Name           | Type         | PK  | Mandatory | Description                             |
|----------------|--------------|-----|-----------|---|
| parameterName  | varchar(50)  | Yes | Yes       | The name of the command line parameter. |
| parameterValue | varchar(255) | No  | No        | The value of the parameter.             |

Table 2-23, DITempGrans, is used by the Data Pool Cleanup Utility for the temporary storage of granuleIds that are passed in through the –file parameter.

**Table 2-23. DITempGrans**

| Name      | Type | PK  | Mandatory | Description                                |
|-----------|------|-----|-----------|--|
| granuleId | ID   | Yes | Yes       | The unique ID which identifies the granule |

Table 2-24, DITempPhantoms, is used as temporary work space to store the names of phantom files. It will populated through bcp.

**Table 2-24. DITempPhantoms**

| Name          | Type        | PK | Mandatory | Description   |
|---------------|-------------|----|-----------|---|
| directoryPath | varchar(80) | No | Yes       | Path Name of the browse, science, or metadata granule files relative to the Data Pool root directory. |
| fileName      | varchar(80) | No | Yes       | The file name for a science, metadata or browse file  |

Table 2-25, DIProcAttributes, contains the static configuration attributes read by the Data Pool stored procedures.

**Table 2-25. DIProcAttributes**

| Name          | Type        | PK  | Mandatory | Description  |
|---------------|-------------|-----|-----------|--|
| procName      | varchar(30) | Yes | Yes       | The name of the stored procedure                             |
| attributeName | varchar(30) | Yes | Yes       | The name of the attribute which is use to look up its value. |
| charValue     | varchar(30) | No  | No        | The value for a char type attribute.                         |
| intValue      | int         | No  | No        | The value for an integer type attribute.                     |
| floatValue    | numeric(8)  | No  | No        | The value for a float type attribute.                        |

Table 2-26, DIActiveInsertQueue, contains Data Pool insert actions that have been queued up by the Spatial Subscription Server.

**Table 2-26. DIActiveInsertQueue (1 of 2)**

| Name              | Type          | PK  | Mandatory | Description  |
|-------------------|---------------|-----|-----------|--|
| insQueueId        | numeric(16,0) | Yes | Yes       | Uniquely identifies the queue entry  |
| ecsId             | ID            | No  | No        | The dbld of the granule whose insert is being queued up. It could be science granule or browse granule.  |
| ShortName         | char(8)       | No  | No        | The ShortName of the ESDT of the granule.  |
| VersionId         | tinyint       | No  | Yes       | The version id of the ESDT of the granule.   |
| subId             | int           | No  | No        | The id of the subscription that caused the insert to be queued up.   |
| retentionPriority | int           | No  | No        | The retention priority associated with this subscription.  |
| retentionPeriod   | int           | No  | No        | The retention period associated with this subscription.  |
| metadataOnlyFlag  | char(1)       | No  | No        | The flag indicates whether the action is for inserting only a metadata file for that granule, not the granule science files. Valid values are:<br>Y – Insert the metadata file only<br>N – Insert science granule files and metadata file  |
| enqueueTime       | datetime      | No  | Yes       | The time at which the action was queued.   |
| completionTime    | datetime      | No  | No        | The time that the action was completed. It contains the value NULL until the action status is either DONE or FAILED.   |
| retryCount        | int           | No  | No        | Counts the number of retry for the action.   |
| status            | varchar(20)   | No  | No        | The current status of the action. Valid values are:<br>NULL – the action was not yet processed<br>COMPLETE – the action is done<br>FAILED – the action is failed<br>RETRY – the action is retried<br>NOTINIT – the action is not initiated<br>CANCELED – the action was canceled by the operator |
| statusDetail      | varchar(255)  | No  | No        | Detailed explanation of the status if the action is FAILED.  |

**Table 2-26. DIActiveInsertQueue (2 of 2)**

| Name             | Type         | PK | Mandatory | Description  |
|------------------|--------------|----|-----------|--|
| inCacheFlag      | char(1)      | No | Yes       | Indicates if process is handling a granule that must be read off the tape or whether the granule is in AMASS cache. Valid values are:<br>Y – the granule is in cache<br>N – the granule is on tape |
| actionSource     | char(1)      | No | No        | Indicates if the action is coming from the Spatial Subscription Server or Data Pool Batch Insert Utility. Valid values are:<br>B – Batch Insert<br>S – Subscription                                |
| dispatchPriority | smallint     | No | No        | Dispatch priority for a granule in the queue.  |
| xmlFileName      | varchar(255) | No | No        | Location of the xml file for Non-ECS granule   |
| themeld          | ID           | No | No        | Identifier for a theme   |
| batchLabel       | varchar(16)  | No | No        | Batch label that associate with a batch insert.  |

Table 2-27, DIActiveInsertProcesses, contains information on all the current active Data Pool insert processes.

**Table 2-27. DIActiveInsertProcesses (1 of 3)**

| Name           | Type         | PK  | Mandatory | Description   |
|----------------|--------------|-----|-----------|---|
| granIdentifier | varchar(255) | Yes | Yes       | This column holds the ecsid for ECS granule and xml file name for Non-ECS granule.                              |
| processId      | int          | No  | No        | The Unix pid of the Data Pool Insert Utility (DPIU) insert process.   |
| parentPid      | int          | No  | No        | The Unix pid of the parent Data Pool Action Driver (DPAD) process that created this DPIU.                       |
| xmlFileName    | varchar(255) | No  | No        | Location of the xml file for Non-ECS granule  |
| externalId     | varchar(80)  | No  | No        | The ID which use to identify the Non-ECS granule.   |
| ecsid          | ID           | No  | No        | The SDSRV dbld of the granule whose insert is being queued up. It could be a science granule or browse granule. |
| ShortName      | char(8)      | No  | Yes       | The ShortName of the ESDT of the granule.   |
| VersionId      | tinyint      | No  | Yes       | The version id of the ESDT of the granule.  |

**Table 2-27. DIActiveInsertProcesses (2 of 3)**

| Name                 | Type        | PK | Mandatory | Description   |
|----------------------|-------------|----|-----------|---|
| retentionPriority    | int         | No | No        | The retention priority associated with this subscription.   |
| retentionPeriod      | int         | No | No        | The retention period associated with this subscription.   |
| metadataOnlyFlag     | char(1)     | No | No        | The flag indicates whether the action is for inserting only a metadata file for the granule, not the granule science files. Valid values are:<br>Y – Insert the metadata file only<br>N – Insert science granule files and metadata file  |
| startTime            | datetime    | No | No        | Time current action was dispatched.   |
| lastStatusChangeTime | datetime    | No | No        | Time current action last changed status.  |
| status               | varchar(20) | No | No        | The current status of the current process. Valid values are:<br>STARTING – process was initialized and has started to process a Data Pool insert.<br>PROCESSING – the current process is in process<br>LOCATING GRANULE FILES – looking for science granule files<br>LOCATING BROWSE FILES – looking for browse granule files<br>COPYING GRANULES FROM AMASS – copy science granules from the AMASS host<br>GENERATING XML FILE – generating the metadata file in XML format<br>MOVING GRANULE TO DATA POOLS – copy granule into Data Pool<br>COPYING SDSRV INVENTORY – copy metadata from the SDSRV database<br>POPULATING THE DATA WAREHOUSE – populating all the fact tables<br>PROCESSING BROWSE XREF – generate cross-reference between science granule and browse granule<br>MOVING BROWSE TO DATA POOLS – copy browse granules into Data Pool<br>COPYING BROWSE FROM AMASS – copy browse granule from the AMASS host |

**Table 2-27. DIActiveInsertProcesses (3 of 3)**

| Name               | Type    | PK | Mandatory | Description  |
|--------------------|---------|----|-----------|--|
| status (continued) |         |    |           | EXTRACTING JPEGS – extra the jpeg from the browse file<br>UPDATING BROWSE INVENTORY – update the browse inventory data in Data Pool database<br>CREATING BROWSE LINKS – create links for browse file |
| inCacheFlag        | char(1) | No | No        | Indicates if process is handling a granule that must be read off the tape or whether the granule is in AMASS cache. Valid values are:<br>Y – the granule is in cache<br>N – the granule is on tape   |
| retryCount         | int     | No | No        | Counts the number of retries for the action.   |

Table 2-28, DIftpAccessLog, is a temporary table used by the Data Pool Access Statistic Utility. It contains entries for each Data Pool file access which appears in the FTP log.

**Table 2-28. DIftpAccessLog**

| Name          | Type          | PK | Mandatory | Description                                    |
|---------------|---------------|----|-----------|--|
| directoryPath | varchar(80)   | No | Yes       | The directory path for a Data Pool file        |
| fileName      | varchar(80)   | No | Yes       | The name of a Data Pool file                   |
| accessTime    | datetime      | No | Yes       | The time when the ftp of the file happened     |
| fileSize      | numeric(16,0) | No | Yes       | The size of the file that was accessed via ftp |

Table 2-29, DIWebAccessLog, is a temporary table used by the Data Pool Access Statistic Utility. It contains entries for each Data Pool file (metadata, browse) access which appears in the web log.

**Table 2-29. DIWebAccessLog**

| Name          | Type        | PK | Mandatory | Description                                      |
|---------------|-------------|----|-----------|--|
| directoryPath | varchar(80) | No | Yes       | The directory path for a Data Pool file          |
| fileName      | varchar(80) | No | Yes       | The name of a Data Pool file                     |
| accessTime    | datetime    | No | Yes       | The time when the file was accessed via the web. |

Table 2-30, DIAccessRollup, contains an entry for each Data Pool access statistic rollup.

**Table 2-30. DIAccessRollup**

| Name                    | Type        | PK  | Mandatory | Description   |
|-------------------------|-------------|-----|-----------|---|
| rollupBeginningDateTime | datetime    | Yes | Yes       | The starting time at which Data Pool accesses are extracted from the ftp or web logs.                       |
| rollupEndingDateTime    | datetime    | Yes | Yes       | The ending time at which Data Pool accesses are extracted from the ftp or web logs.                         |
| accessType              | varchar(10) | Yes | Yes       | The type of access log for this process. Valid values are:<br>FTP – any ftp access<br>http – any web access |

Table 2-31, DIGranuleAccess, contains information used for running Data Pool access statistic reports.

**Table 2-31. DIGranuleAccess**

| Name       | Type          | PK  | Mandatory | Description  |
|------------|---------------|-----|-----------|--|
| logEntryId | numeric(16,0) | Yes | Yes       | Uniquely identify each entry in the table  |
| dbId       | ID            | No  | Yes       | The unique identifier for a science granule or browse granule.   |
| accessType | varchar(10)   | No  | Yes       | The type of access log for this process. Valid values are:<br>FTP – any ftp access<br>http – any web access                                  |
| age        | int           | No  | Yes       | The difference between the time at which the file was accessed through FTP or Web and the time at which the file was inserted into Data Pool |
| fileSize   | numeric(16,0) | No  | Yes       | The size of the file   |
| fileType   | varchar(10)   | No  | No        | The type of file. Valid values are:<br>SCIENCE<br>METADATA<br>BROWSE   |
| accessTime | datetime      | Yes | Yes       | The time at which the file was accessed through FTP or Web   |

Table 2-32, DIDimensionGroupESDT, is a static table used for web drill down. It contains information about all possible Data Pool collection groups and collections (ESDSTs) to which a Data Pool granule might belong.

**Table 2-32. DIDimensionGroupESDT**

| Name                 | Type         | PK  | Mandatory | Description  |
|----------------------|--------------|-----|-----------|--|
| groupESDTKey         | int          | Yes | Yes       | Uniquely Identifies a group or ESDT  |
| groupESDTType        | char(1)      | No  | Yes       | Identifies the type, either group or ESDT<br>Valid values are:<br>G – Group<br>E – ESDT  |
| groupESDTValue       | varchar(12)  | No  | Yes       | The value for the group or ESDT. If it is an ESDT, its value is a combination of ShortName and VersionId                                 |
| groupESDTDescription | varchar(255) | No  | No        | The description for the group or ESDT.   |
| groupKey             | int          | No  | No        | If groupESDTType is G, this field contains the value NULL. Otherwise, the field contains the key of the group to which the ESDT belongs. |

Table 2-33, DlDimensionDayNight, is a static table used for web drill down. It contains information about all possible values of DayNightFlag for which Data Pool granules might belong.

**Table 2-33. DIDimensionDayNight**

| Name                | Type        | PK  | Mandatory | Description  |
|---------------------|-------------|-----|-----------|--|
| dayNightKey         | smallint    | Yes | Yes       | Uniquely Identifies a condition of the day when the granule acquisition occurred.                                |
| dayNightValue       | char(1)     | No  | Yes       | The value represented by the key.<br>Valid values are:<br>D – Day<br>N – Night<br>B – Both<br>X – Not Compatible |
| dayNightDescription | varchar(20) | No  | No        | Description for each dayNightValue   |

Table 2-34, DlDimensionTimeOfDay, is a static table used for web drill down. It contains a row for each time of day bin to which a Data Pool granule might belong.

**Table 2-34. DIIDimensionTimeOfDay**

| Name               | Type     | PK  | Mandatory | Description   |
|--------------------|----------|-----|-----------|---|
| timeOfDayKey       | smallint | Yes | Yes       | Uniquely identifies periods of the day  |
| timeOfDayType      | char(1)  | No  | Yes       | Type that is used to describe a period of the day.<br>1 – One hour<br>3 – 30 minutes<br>4 – Four hours<br>D – Day<br>H – Half day   |
| timeOfDayBeginTime | smallint | No  | Yes       | The beginning time of the period  |
| timeOfDayEndTime   | smallint | No  | Yes       | The ending time of the period   |
| todHourKey         | smallint | No  | No        | Null if timeOfDayType is D, H, 4, or 1. If timeOfDayType is 3, this field is used to cross reference this row to its corresponding hour row in this table; i.e., this field contains the value of timeOfDayKey for the row where timeOfDayType is 1, and the time range for that hour row contains the time range for this row.         |
| todFourHourKey     | smallint | No  | No        | Null if timeOfDayType is D, H, Or 4. If timeOfDayType is 1 or 3, this field is used to cross reference this row to its corresponding 4-hour row in this table; i.e., this field contains the value of timeOfDayKey for the row where timeOfDayType is 4, and the time range for that 4 hour row contains the time range for this row.   |
| todHalfDayKey      | smallint | No  | No        | Null if timeOfDayType is D or H. If timeOfDayType is 1, 3 or 4, this field is used to cross reference this row to its corresponding halfday row in this table; i.e., this field contains the value of timeOfDayKey for the row where timeOfDayType is H, and the time range for that half day row contains the time range for this row. |

Table 2-35, DIIDimensionMP, is a static table used for web drill down. It contains information about all known measured parameters.

**Table 2-35. DI Dimension MP**

| Name          | Type         | PK  | Mandatory | Description  |
|---------------|--------------|-----|-----------|--|
| qaKey         | Int          | Yes | Yes       | Uniquely Identifies a measured parameter or the value of the Science QA flag |
| qaValue       | varchar(40)  | No  | No        | The value for the parameter  |
| qaDescription | varchar(255) | No  | Yes       | The description for the key and the value.                                   |

Table 2-36, DI Dimension Science QA, is a static table used for web drill down. It contains information about all known science QA flag values which could be present in a Data Pool granule.

**Table 2-36. DI Dimension Science QA**

| Name          | Type         | PK  | Mandatory | Description  |
|---------------|--------------|-----|-----------|--|
| qaCode        | tinyint      | Yes | Yes       | Uniquely Identifies a value of the Science QA flag |
| qaValue       | varchar(40)  | No  | Yes       | The value for the specific code                    |
| qaDescription | varchar(255) | No  | Yes       | The description for the key and the value.         |

Table 2-37, DI Dimension MP Science QA Xref, contains the mapping of QA parameters and QA values. It is a static table used for populating the DI Fact QA table, Table 2-44.

**Table 2-37. DI Dimension MP Science QA Xref**

| Name      | Type    | PK  | Mandatory | Description  |
|-----------|---------|-----|-----------|--|
| qaKey     | int     | Yes | Yes       | Uniquely Identifies a value of the Science QA flag                               |
| qaCode    | char(1) | No  | Yes       | Code of the Science QA flag  |
| qaNameKey | int     | No  | No        | This field contains the value of qaKey for the corresponding measured parameter. |

Table 2-38, DI Dimension Temporal, is a static table used for web drill down. It contains a row for each possible temporal bin (day, week, month, and year) to which a Data Pool granule might belong. NOTE: For purposes of this table, weeks are not defined as Sunday - Saturday groups of 7 days, but are instead defined as subsets of 7 day weeks wholly contained within a calendar month. For example, if a Sunday - Saturday week is July 29 - August 4, this table will store July 29-31 as one week, and August 1-4 as a different week.

**Table 2-38. DI Dimension Temporal**

| Name              | Type     | PK  | Mandatory | Description   |
|-------------------|----------|-----|-----------|---|
| temporalKey       | int      | Yes | Yes       | Uniquely Identifies a date range bin  |
| temporalType      | char(1)  | No  | Yes       | Identifies the type of key. Valid values are:<br>D – Day<br>W – Week<br>M – Month<br>Y – Year   |
| temporalBeginDate | datetime | No  | Yes       | The beginning time for the date range   |
| temporalEndDate   | datetime | No  | Yes       | The ending time for the date range  |
| weekKey           | int      | No  | No        | Null if temporalType is Y, M, or W. If temporalType is D, this field is used to cross reference this row to its corresponding week row in this table; i.e., this field contains the value of temporalKey for the row where temporalType is W, and this day is within that week.                 |
| monthKey          | int      | No  | No        | Null if temporalType is Y or M. If temporalType is W or D, this field is used to cross reference this row to its corresponding month row in this table; i.e., this field contains the value of temporalKey for the row where temporalType is M, and this day or week is within that month.      |
| yearKey           | int      | No  | No        | Null if temporalType is Y. If temporalType is M, W, or D, this field is used to cross reference this row to its corresponding year row in this table; i.e., this field contains the value of temporalKey for the row where temporalType is Y, and this day, week, or month is within that year. |

Table 2-39, DI Dimension Spatial, is a static table used for web drill down. It contains a row for each possible spatial bin to which a Data Pool granule might belong.

**Table 2-39. *DIDimensionSpatial* (1 of 2)**

| Name        | Type    | PK  | Mandatory | Description   |
|-------------|---------|-----|-----------|---|
| spatialKey  | int     | Yes | Yes       | Uniquely identifies a geographical location tile.   |
| spatialType | char(1) | No  | Yes       | Used to identify a type of geographical location. Valid values are:<br>1 – 1x1 degree tile<br>3 – 3x1 degree tile<br>9 – 9x2 degree tile<br>A – 9x6 degree tile<br>B – 18x12 degree tile<br>H – half hemisphere<br>G – Global   |
| BR_Degree   | llbox   | No  | Yes       | The value of the geographical location  |
| spatialKey3 | int     | No  | No        | Null if spatialType is 3, 9, A, B, H, or G. If spatialType is 1, this field is used to cross reference this row to its corresponding 3X1 row in this table; i.e., this field contains the value of spatialKey for the row where spatialType is 3, and this 1x1 tile is within that 3x1 tile.                          |
| spatialKey9 | int     | No  | No        | Null if spatialType is 9, A, B, H, or G. If spatialType is 1 or 3, this field is used to cross reference this row to its corresponding 9x2 row in this table; i.e., this field contains the value of spatialKey for the row where spatialType is 9, and this 1x1 or 3x1 tile is within that 9x2 tile.                 |
| spatialKeyA | int     | No  | No        | Null if spatialType is A, B, H, or G. If spatialType is 1, 3, or 9, this field is used to cross reference this row to its corresponding 9x6 row in this table; i.e., this field contains the value of spatialKey for the row where spatialType is A, and this 1x1, 3x1, or 9x2 tile is within that 9x6 tile.          |
| spatialKeyB | int     | No  | No        | Null if spatialType is B, H, or G. If spatialType is 1, 3, 9, or A, this field is used to cross reference this row to its corresponding 18x12 row in this table; i.e., this field contains the value of spatialKey for the row where spatialType is B, and this 1x1, 3x1, 9x2, or 9x6 tile is within that 18x12 tile. |

**Table 2-39. *DIDimensionSpatial* (2 of 2)**

| Name        | Type | PK | Mandatory | Description   |
|-------------|------|----|-----------|---|
| spatialKeyH | int  | No | No        | Null if spatialType is H or G. If spatialType is 1, 3, 9, A, or B, this field is used to cross reference this row to its corresponding half hemisphere row in this table; i.e., this field contains the value of spatialKey for the row where spatialType is H, and this 1x1, 3x1, 9x2, 9x6, or 18x12 tile is within that half hemisphere tile. |

Table 2-40, *DIDimensionPolygonXref*, is a static table used for populating the *DlFactSpatial* table for orbit data. It contains spatial keys for each polygon with specific path and instrument.

**Table 2-40. *DIDimensionPolygonXref***

| Name          | Type     | PK  | Mandatory | Description  |
|---------------|----------|-----|-----------|--|
| spatialKey    | int      | Yes | Yes       | Uniquely identifies a geographical location tile.        |
| platInstrCode | tinyint  | Yes | Yes       | A code identifying a particular platform and instrument. |
| PathNo        | smallint | Yes | Yes       | Orbit number.  |
| SequenceNo    | smallint | Yes | Yes       | The sequence of the polygon for a MISR orbit granule.    |

Table 2-41, *DlFactGroupESDT*, stores the relation between granules and the group/ESDT search domain, defined in *DIDimensionGroupESDT*.

**Table 2-41. *DlFactGroupESDT***

| Name         | Type | PK  | Mandatory | Description                         |
|--------------|------|-----|-----------|-------------------------------------|
| granuleId    | ID   | Yes | Yes       | Uniquely Identifies a granule       |
| groupESDTKey | int  | Yes | Yes       | Uniquely Identifies a group or ESDT |

Table 2-42, *DlFactDayNight*, stores the relation between granules and the DayNight search domain, defined in *DIDimensionDayNight*.

**Table 2-42. *DlFactDayNight***

| Name        | Type | PK  | Mandatory | Description   |
|-------------|------|-----|-----------|---|
| granuleId   | ID   | Yes | Yes       | Uniquely Identifies a granule   |
| dayNightKey | int  | Yes | Yes       | Uniquely Identifies a condition of the day when the granule acquisition occurred. |

Table 2-43, DIFactTimeOfDay, stores the relation between granules and the TimeOfDay search domain, defined in DIDimensionTimeOfDay.

**Table 2-43. DIFactTimeOfDay**

| Name         | Type | PK  | Mandatory | Description                             |
|--------------|------|-----|-----------|---|
| granuleId    | ID   | Yes | Yes       | Uniquely Identifies a granule           |
| timeOfDayKey | int  | Yes | Yes       | Uniquely Identifies a period of the day |

Table 2-44, DIFactQA, stores the relation between granules and the QA search domain, defined in DIDimensionQA.

**Table 2-44. DIFactQA**

| Name      | Type | PK  | Mandatory | Description  |
|-----------|------|-----|-----------|--|
| granuleId | ID   | Yes | Yes       | Uniquely Identifies a granule  |
| qaKey     | int  | Yes | Yes       | Uniquely Identifies a measured parameter or the value of the Science QA flag |

Table 2-45, DIFactTemporal, stores the relation between granules and the temporal search domain, defined in DIDimensionTemporal.

**Table 2-45. DIFactTemporal**

| Name        | Type | PK  | Mandatory | Description                       |
|-------------|------|-----|-----------|-----------------------------------|
| granuleId   | ID   | Yes | Yes       | Uniquely Identifies a granule     |
| temporalKey | int  | Yes | Yes       | Uniquely Identifies a date range. |

Table 2-46, DIFactSpatial, stores the relation between granules and the spatial search domain, defined in DIDimensionSpatial.

**Table 2-46. DIFactSpatial**

| Name       | Type | PK  | Mandatory | Description  |
|------------|------|-----|-----------|--|
| granuleId  | ID   | Yes | Yes       | Uniquely Identifies a granule                      |
| spatialKey | int  | Yes | Yes       | Uniquely Identifies a geographical tiled location. |

Table 2-47, DIIdentifier, contains the next available system generated unique identifier. There is a separate row in this table to generate identifiers for the DICollections, DIGranules, DIThemes, DIBrowse tables.

Each row in this table is padded out to the 2K page size to minimize locking contention on a per row basis.

**Table 2-47. DIdentifier**

| Name                   | Type      | PK  | Mandatory | Description  |
|------------------------|-----------|-----|-----------|--|
| identifierType         | char(30)  | Yes | Yes       | The data type of the identifier for which the DsMdIdentifier row exists.                                 |
| identifierObjectType   | char(30)  | Yes | Yes       | The name or type of the DPL database object for which the DsMdIdentifier row exists.                     |
| lastIdentifier         | ID        | No  | Yes       | The next available uniqueness identifier available of type ID for a specific IdentifierObjectType.       |
| lastIntIdentifier      | int       | No  | Yes       | The next available uniqueness identifier available of type integer for a specific IdentifierObjectType.  |
| lastSmallintIdentifier | smallint  | No  | Yes       | The next available uniqueness identifier available of type smallint for a specific IdentifierObjectType. |
| identifierPad1         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |
| identifierPad2         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |
| identifierPad3         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |
| identifierPad4         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |
| identifierPad5         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |
| identifierPad6         | char(255) | No  | Yes       | One of seven of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.         |
| identifierPad7         | char(255) | No  | Yes       | One of seven column of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.  |

Table 2-48, EcDbDatabaseVersions, identifies the current version of the Data Pool database.

**Table 2-48. EcDbDatabaseVersions**

| Name                   | Type         | PK  | Mandatory | Description  |
|------------------------|--------------|-----|-----------|--|
| EcDbSchemaVersionId    | smallint     | Yes | Yes       | The subsystem-specific identifier for this database schema version   |
| EcDbDropVersion        | char(64)     | Yes | Yes       | The official description of the ECS software drops for this database version level.                                      |
| EcDbDropDescription    | varchar(255) | No  | No        | The official name of the ECS software drops for this database version level.   |
| EcDbCurrentVersionFlag | char(1)      | No  | No        | Flag indicating if this row represents the current database version entry  |
| EcDbDatabaseName       | varchar(255) | No  | No        | The name of the database for which this database version level is applied.   |
| EcDbDropInstallDate    | datetime     | No  | No        | The date and time that the database version level was installed.   |
| EcDbSybaseVersion      | varchar(255) | No  | No        | The software release version of the Sybase SQL server in place when this database version level was initially installed. |
| EcDbSybaseServer       | varchar(255) | No  | No        | The name of the baseline Sybase SQL server controlling this database.  |
| EcDbComments           | varchar(255) | No  | No        | Notes or comments on the database version level.   |
| EcDbUpdateProcess      | varchar(255) | No  | No        | The installation method by which this database version level was installed.  |

Table 2-49, DIUpdGranulesTemp, is a temporary permanent table, which will get the data from a flat file using bcp for update granule expiration.

**Table 2-49. DIUpdGranulesTemp**

| Name              | Type     | PK | Mandatory | Description  |
|-------------------|----------|----|-----------|--|
| GranuleId         | ID       | No | Yes       | The unique ID which identifies the granule in DPL. |
| ExpirationDate    | datetime | No | Yes       | Date when the granule expired.                     |
| RetentionPriority | smallint | No | No        | Priority of the granule in the Data Pool database  |

Table 2-50, DLXMLFilesToInsert, holds Non-ECS granule data for the Batch Insert utility.

**Table 2-50. DIXMLFilesToInsert**

| Name        | Type         | PK  | Mandatory | Description   |
|-------------|--------------|-----|-----------|---|
| ProcessId   | int          | Yes | Yes       | The Unix pid of the Data Pool Insert Utility (DPIU) insert process. |
| XmlFileName | varchar(255) | Yes | Yes       | Location of the xml file for Non-ECS granule                        |
| ShortName   | char(8)      | No  | No        | The ShortName of the ESDT of the granule.                           |
| VersionId   | tinyint      | No  | No        | The version id of the ESDT of the granule.                          |

Table 2-51, DIECSSIDsToInsert, holds the granules from Science Data Server.

**Table 2-51. DIECSIdsToInsert**

| Name      | Type | PK  | Mandatory | Description   |
|-----------|------|-----|-----------|---|
| ProcessId | Int  | Yes | Yes       | The Unix pid of the Data Pool Insert Utility (DPIU) insert process.   |
| ecsId     | ID   | No  | No        | The SDSRV dbId of the granule whose insert is being queued up. It could be a science granule or browse granule. |

Table 2-52, DIHEGLookup, holds all collections that allow HEG conversion.

**Table 2-52. DIHEGLookup**

| Name      | Type    | PK  | Mandatory | Description                               |
|-----------|---------|-----|-----------|---|
| ShortName | Char(8) | Yes | Yes       | The ShortName of the ESDT of the granule. |

Table 2-53, DICartOrder, contains information on orders that order through the Web Drill Down GUI.

**Table 2-53. DICartOrder**

| Name        | Type          | PK  | Mandatory | Description  |
|-------------|---------------|-----|-----------|--|
| orderId     | ID            | Yes | Yes       | Order id   |
| email       | varchar (255) | Yes | Yes       | Email Id   |
| realName    | varchar (255) | No  | No        | users real name  |
| status      | varchar (10)  | No  | No        | <NULL> - order just entered into system<br>ENTERED - order ready for HEG processing<br>PROCESSED - order processed by HEG<br>PACKAGING - order is now being packaged<br>DONE - order complete (user notified if necessary)<br>FAILOPER – order failed – operator should be notified<br>FAILOPERN – order failed – operator has been notified<br>FAILED- order is failed – cannot retry |
| timestamp   | datetime      | No  | No        | last update time/date  |
| ul_lat      | float         | No  | No        | upper left latitude  |
| ul_lon      | float         | No  | No        | upper left longitude   |
| lr_lat      | float         | No  | No        | lower right latitude   |
| lr_lon      | float         | No  | No        | lower right longitude  |
| outputProj  | varchar (10)  | No  | No        | Output map projection (entire order)   |
| outputfmt   | varchar (10)  | No  | No        | Output format – hdfeos/geotiff (entire order)  |
| notes       | varchar (255) | No  | No        | Notes from operator on status of order   |
| insertDate  | datetime      | No  | No        | when order was first inserted  |
| archiveFlag | char(1)       | No  | Yes       | Y – Delete had performed on the order<br>N – Delete had not performed on the order   |

Table 2-54, DICartOrderitem, contains items for a Web Drill Down order.

**Table 2-54. *DICartOrderitem***

| Name      | Type          | PK  | Mandatory | Description                                       |
|-----------|---------------|-----|-----------|---|
| itemId    | ID            | Yes | Yes       | Item id   |
| orderId   | ID            | Yes | Yes       | Order id  |
| inputFile | varchar (255) | No  | Yes       | File in datapool archive to process               |
| outProj   | varchar (10)  | No  | No        | Output format for file – hdfeos/geotiff           |
| outputfmt | varchar (10)  | No  | No        | Output map projection for file                    |
| status    | varchar (10)  | No  | No        | status (of individual file)                       |
| errorCode | int           | No  | No        | if FAILED, error code from HEG converter          |
| granuleId | ID            | No  | No        | Granule id (from DIGranules) that file belongs to |

Table 2-55, *DIStatGroupESDT*, contains group statistics for Web Access.

**Table 2-55. *DIStatGroupESDT***

| Name         | Type | PK | Mandatory | Description  |
|--------------|------|----|-----------|--|
| groupESDTKey | int  | No | Yes       | Uniquely identify a collection group                                     |
| number       | int  | No | Yes       | The number of granules in the Data Pool database for a collection group. |

Table 2-56, *DIStatGroupESDT*, contains group statistics for Web Access.

**Table 2-56. *DIStatGroupESDT***

| Name          | Type    | PK | Mandatory | Description   |
|---------------|---------|----|-----------|---|
| groupESDTKey  | int     | No | Yes       | Uniquely identify a collection group or ESDT.   |
| groupESDTType | char(1) | No | Yes       | Identifies the type, either group or ESDT<br>Valid values are:<br>G – Group<br>E – ESDT |
| number        | int     | No | Yes       | The number of granules in the Data Pool database for a collection group.                |

### 2.1.3 Rules

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. Multiple rules may be defined for a given column. Multiple rules are not always uniquely named. All rules defined in Sybase for the Data Pool database are described in Table 2-55.

**Table 2-55. List of Rules**

| Rule Name             | Description   |
|-----------------------|---|
| RuleRetentionPriority | Value of retentionPriority is between 1 and 255.  |
| RuleParameterType     | Value for Parameter type column in DIActionConfig table. The valid values are "I", "C", "F".        |
| RuleFileType          | Valid values are "SCIENCE", "METADATA", and "BROWSE".   |
| RuleSpatialType       | Valid values are "Orbit", "Rectangle", "GPolygon", "Point", "Circle", "NotSupported", and "Unknown" |
| RuleFlag              | Rule for all flag columns. Valid values are "Y", and "N".   |
| RuleProcessName       | Rule for processName column in DIProcesses. Valid values are "INSERT", "DISTRIBUTION".              |

#### 2.1.4 Defaults

Defaults are used to supply a value for a column when one is not defined at insert time. All defaults defined in Sybase for the Data Pool database are described in the Table 2-56.

**Table 2-56. List of Defaults**

| Name                       | Value   |
|----------------------------|---------|
| spatialSearchType_default  | Unknown |
| exclusionSCFlag_default    | N       |
| esdtValidationFlag_default | Y       |
| state_default              | 0       |
| inCascheFlag_default       | Y       |
| convertEnabledFlag_default | N       |
| bulkExportedFlag_default   | N       |
| archiveFlag_default        | N       |

#### 2.1.5 Views

Sybase allows the definition of views as a means of limiting application or user access to data in a table or tables. Views create a logical table from columns found in one or more tables. There are no views defined in the Data Pool database.

#### 2.1.6 Integrity Constraints

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks without automatically requiring programming constraints, which support "restrict-only" operations. This means that a row can not be deleted or updated if there are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations can not be performed if a declarative constraint has been used. All declarative integrity constraints defined in the Data Pool database are described below.

### **2.1.6.1 Dependencies on Table: DICollectionGroup**

#### **Reference by List**

| Referenced by | Primary Key | Foreign Key |
|---------------|-------------|-------------|
| DICollections | groupId     | groupId     |

### **2.1.6.2 Dependencies on Table: DICollections**

#### **Reference by List**

| Referenced by | Primary Key  | Foreign Key  |
|---------------|--------------|--------------|
| DIGranules    | collectionId | collectionId |

### **2.1.6.3 Dependencies on Table: DIGranules**

#### **Reference by List**

| Referenced by               | Primary Key | Foreign Key |
|-----------------------------|-------------|-------------|
| DIGranuleExpirationPriority | granuleId   | granuleId   |
| DIGranuleBrowseXref         | granuleId   | granuleId   |
| DIFile                      | granuleId   | granuleId   |
| DIOrbitCalculatedSpatial    | granuleId   | granuleId   |
| DIGPolygon                  | granuleId   | granuleId   |
| DIBoundingRectangle         | granuleId   | granuleId   |
| DIMeasuredParameter         | granuleId   | granuleId   |
| DIFactSpatial               | granuleId   | granuleId   |
| DIFactTemporal              | granuleId   | granuleId   |
| DIFactQA                    | granuleId   | granuleId   |
| DIFactTimeOfDay             | granuleId   | granuleId   |
| DIFactDayNight              | granuleId   | granuleId   |
| DIFactGroupESDT             | granuleId   | granuleId   |
| DIGranuleThemeXref          | granuleId   | granuleId   |

### **2.1.6.4 Dependencies on Table: DIBrowse**

| Referenced by       | Primary Key | Foreign Key |
|---------------------|-------------|-------------|
| DIGranuleBrowseXref | browseld    | browseld    |
| DIBrowseFile        | browseld    | browseld    |

#### **2.1.6.5 Dependencies on Table: DIPlatInstrCode**

| Referenced by   | Primary Key   | Foreign Key   |
|-----------------|---------------|---------------|
| DIOrbitPolygons | platInstrCode | platInstrCode |

#### **2.1.6.6 Dependencies on Table: DIDimensionSpatial**

| Referenced by          | Primary Key | Foreign Key |
|------------------------|-------------|-------------|
| DIFactSpatial          | spatialKey  | spatialKey  |
| DIDimensionPolygonXref | spatialKey  | spatialKey  |

#### **2.1.6.7 Dependencies on Table: DIDimensionTemporal**

| Referenced by  | Primary Key | Foreign Key |
|----------------|-------------|-------------|
| DIFactTemporal | temporalKey | temporalKey |

#### **2.1.6.8 Dependencies on Table: DIDimesionTimeOfDay**

| Referenced by   | Primary Key  | Foreign Key  |
|-----------------|--------------|--------------|
| DIFactTimeOfDay | timeOfDayKey | timeOfDayKey |

#### **2.1.6.9 Dependencies on Table: DIDimensionDayNight**

| Referenced by  | Primary Key | Foreign Key |
|----------------|-------------|-------------|
| DIFactDayNight | dayNightKey | dayNightKey |

#### **2.1.6.10 Dependencies on Table: DIDimensionGroupESDT**

| Referenced by   | Primary Key  | Foreign Key  |
|-----------------|--------------|--------------|
| DIFactGroupESDT | groupESDTKey | groupESDTKey |

#### **2.1.6.11 Dependencies on Table: DIOrbitPolygons**

| Referenced by          | Primary Key   | Foreign Key   |
|------------------------|---------------|---------------|
| DIDimensionPolygonXref | platInstrCode | platInstrCode |
| DIDimensionPolygonXref | PathNo        | PathNo        |
| DIDimensionPolygonXref | SequenceNo    | SequenceNo    |

#### **2.1.6.12 Dependencies on Table: DIThemes**

| Referenced by      | Primary Key | Foreign Key |
|--------------------|-------------|-------------|
| DIGranuleThemeXref | themeld     | themeld     |

#### **2.1.6.13 Dependencies on Table: DICartOrder**

| Referenced by   | Primary Key | Foreign Key |
|-----------------|-------------|-------------|
| DICartOrderItem | orderId     | orderId     |

#### **2.1.6.14 Dependencies on Table: DIDimensionMP**

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DIDimensionMPScienceQAXref | qaKey       | qaNameKey   |

#### **2.1.6.15 Dependencies on Table: DIDimensionMP**

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DIDimensionMPScienceQAXref | qaCode      | qaCode      |

### **2.1.7 Triggers**

Sybase supports the enforcement of business policy via the use of triggers. A trigger is best defined as a set of activities or checks that should be performed automatically whenever a row is inserted, updated, or deleted from a given table. Sybase allows the definition of insert, update, and delete trigger per table. All triggers defined in the Data Pool database are described in Table 2-57.

**Table 2-57. List of Triggers**

| Trigger Name                  | Type   | Table                    |
|-------------------------------|--------|--------------------------|
| TrigInsCollectionGroup        | Insert | DICollectionGroup        |
| TrigDelCollectionGroup        | Delete | DICollectionGroup        |
| TrigUpdCollectionGroup        | Update | DICollectionGroup        |
| TrigInsCollections            | Insert | DICollections            |
| TrigDelCollections            | Delete | DICollections            |
| TrigUpdCollections            | Update | DICollections            |
| TrigInsOrbitCalculatedSpatial | Insert | DIOrbitCalculatedSpatial |
| TrigUpdOrbitCalculatedSpatial | Update | DIOrbitCalculatedSpatial |
| TrigInsMeasuredParameter      | Insert | DIMeasuredParameter      |
| TrigUpdMeasuredParameter      | Update | DIMeasuredParameter      |
| TrigUpdCartOrderStatus        | Update | DICartOrderItem          |

### 2.1.8 Stored Procedures

Sybase also includes support for business policy via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business policy and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. A listing of each of the stored procedures in the Data Pool database is given in Table 2-58. A brief definition of each of these stored procedures follows.

**Table 2-58. List of Stored Procedures (1 of 26)**

| Name                          | Table Accessed                         | Stored Procedure Called | Description  |
|-------------------------------|--|-------------------------|--|
| ProcCancelInsertQueue         | DlInsertActionQueue                    |                         | Updates an insert status in the DlInsertActionQueue to "CANCELLED".                                  |
| ProcCheckCoveredRollups       | DIAccessRollup                         |                         | Checks the previous rollupdatetime to determine whether the period of rollup had been done.          |
| ProcCheckRecovery             | DIFilesToDelete<br>DICleanupParameters |                         | Checks to see if rows exist in DICleanupParameters. If so, return them.                              |
| ProcCopySdsrvBrowselInventory | DsMdBrowse<br>DIBrowse                 |                         | Copies browse inventory information from SDSRV to Data Pool. Execute this procedure in chained mode. |

**Table 2-58. List of Stored Procedures (2 of 26)**

| Name                         | Table Accessed   | Stored Procedure Called | Description  |
|------------------------------|--|-------------------------|--|
| ProcCopySdsrvGranInventory   | DsMdGranules<br>DsMdMeasuredParameter<br>DsMdOrbitCalculatedSpatial<br>DIActiveInsertProcesses |                         | Copies granule inventory information from SDSRV to datapool. Execute this procedure in chained mode.     |
| ProcDelGranAccessByTimeRange | DIGranuleSubscription<br>DIGranuleAccess<br>DIAccessRollup                                     |                         | Delete access statistic data by a time range.  |
| ProcDelGranAcsByTimeAndType  | DIGranuleAccess<br>DIAccessRollup  |                         | Delete access statistic data by a time range and the access type.  |
| ProcDeleteAssocXref          | DIFilesToDelete<br>DIGranuleBrowseXref   | ProcGetProcAttributeInt | Delete all rows in DIGranuleBrowseXref table that associated with granules that are about to be deleted. |
| ProcDeleteBndgRectangle      | DIFilesToDelete<br>DIBoundingRectangle   | ProcGetProcAttributeInt | Delete all granules from DIBoundingRectangle table where the granule exists in DIFilesToDelete.          |
| ProcDeleteDayNightFact       | DIFilesToDelete<br>DIFactDayNight  | ProcGetProcAttributeInt | Delete from DIFactDayNight table for all granules in DIFilesToDelete.                                    |
| ProcDeleteFtpAccessLog       | DIFtpAccessLog   |                         | Truncate the DIFtpAccessLog table.   |
| ProcDeleteGPolygon           | DIFilesToDelete<br>DIGPolygon  | ProcGetProcAttributeInt | Delete all granules from DIGPolygon table where the granule exists in DIFilesToDelete.                   |
| ProcDeleteGranFiles          | DIFile<br>DIFilesToDelete  | ProcGetProcAttributeInt | Delete all rows in DIFile where the file exists in DIFilesToDelete.                                      |
| ProcDeleteGroupESDTFact      | DIFilesToDelete<br>DIFactGroupESDT   | ProcGetProcAttributeInt | Delete from DIFactGroupESDT table for all granules in DIFilesToDelete.                                   |
| ProcDeleteIAQOldActionItems  | DIIinsertActionQueue   |                         | Remove completed actions whose completion time is older than DELETECOMPLETEACTIONSAFTER.                 |

**Table 2-58. List of Stored Procedures (3 of 26)**

| Name                        | Table Accessed   | Stored Procedure Called     | Description  |
|-----------------------------|--|-----------------------------|--|
| ProcDeleteMeasuredParameter | DIFilesToDelete<br>DIMeasuredParameter   | ProcGetProcAttrib<br>uteInt | Delete all granules from DIMeasuredParameter table where the granule exists in DIFilesToDelete.        |
| ProcDeleteOrbCalcSpatial    | DIFilesToDelete<br>DIOrbitCalculatedSpatial  | ProcGetProcAttrib<br>uteInt | Delete all granules from DIOrbitCalculatedSpatial table where the granule exists in DIFilesToDelete.   |
| ProcDeleteProcess           | DIActiveInsertProcesses<br>DIActionConfig<br>DILnsertActionQueue   |                             | Delete process entry from database based on db id. And modify the queue based on completion status.    |
| ProcDeleteQAFact            | DIFilesToDelete<br>DIFactQA  | ProcGetProcAttrib<br>uteInt | Delete from DIFactQA table for all granules in DIFilesToDelete.  |
| ProcDeleteRetPriority       | DIFilesToDelete<br>DIGranuleRetentionPriority  | ProcGetProcAttrib<br>uteInt | Delete all granules from DIGranuleRetentionPriority table where the granule exists in DIFilesToDelete. |
| ProcDeleteSciGranules       | DIFileToDelete<br>DIGranules   | ProcGetProcAttrib<br>uteInt | Delete science granules that are in DIFileToDelete.  |
| ProcDeleteSingleGranule     | DIGranuleSubscription,<br>DIFile,<br>DIGranuleExpirationPriority,<br>DIGranuleBrowseXref,<br>DIOrbitCalculatedSpatial ,<br>DIGPolygon,<br>DIBoundingRectangle,<br>DIMeasuredParameter,<br>DIFactSpatial,<br>DIFactTemporal,<br>DIFactQA,<br>DIFactTimeOfDay,<br>DIFactDayNight,<br>DIFactGroupESDT |                             | Delete a single granule from Data Pool database. It uses for recovery when inserted failed.            |
| ProcDeleteSpatialFact       | DIFilesToDelete<br>DIFactSpatial   | ProcGetProcAttrib<br>uteInt | Delete from DIFactSpatial table for all granules in DIFilesToDelete.                                   |

**Table 2-58. List of Stored Procedures (4 of 26)**

| Name                    | Table Accessed                     | Stored Procedure Called     | Description  |
|-------------------------|------------------------------------|-----------------------------|--|
| ProcDeleteTemporalFact  | DIFilesToDelete<br>DIFactTemporal  | ProcGetProcAttrib<br>uteInt | Delete from DIFactTemporal table for all granules in DIFilesToDelete.  |
| ProcDeleteTimeOfDayFact | DIFilesToDelete<br>DIFactTimeOfDay | ProcGetProcAttrib<br>uteInt | Delete from DIFactTimeOfDay table for all granules in DIFilesToDelete.   |
| ProcDeleteWebAccessLog  | DIWebAccessLog                     |                             | Truncate DIWebAccessLog table.   |
| ProcGetACProcessCounts  | DIActionConfig                     |                             | Return max number of insert processes, insert processes that require AMASS access to cache, and processes that do not require AMASS access to cache.   |
| ProcGetACTimeLimits     | DIActionConfig                     |                             | Return max time in minutes operators allow a DPIU process to complete whose files are in cache. And max time in hours operators allow a DPIU process to complete whose files are not in cache. |
| ProcGetAIPList          | DIActiveInsertProcesses            |                             | Get all active insert processes.   |
| ProcGetActionConfig     | DIConfig                           |                             | Return action config values of parameter   |
| ProcGetActiveProcesses  | DIActiveInsertProcesses            |                             | Retrieves all rows from the DIActiveInsertProcesses table.   |
| ProcGetAllCollGrps      | DICollectionGroup                  |                             | Retrieve all rows from DICollectionGroup table.  |
| ProcGetAllConfigParms   | DIActionConfig                     |                             | Retrieves the value of all configuration parameters from DIActionConfig.   |
| ProcGetAllowedProcesses | DIActionConfig                     |                             | Retrieves<br>NumOfAllowedInsertProcesses,<br>NumOfAllowedCacheProcesses,<br>NumOfAllowedNonCacheProcesses, RefreshRate<br>from the DIActionConfig table.                                       |

**Table 2-58. List of Stored Procedures (5 of 26)**

| Name                         | Table Accessed   | Stored Procedure Called | Description   |
|------------------------------|--|-------------------------|---|
| ProcGetBrowseEcsInsertDate   | DsMdBrowse   |                         | Retrieves insert time from SDSRV inventory for the specified browse.  |
| ProcGetBrowseFiles           | DIBrowseFile   |                         | Get files associated with a browse in DataPool inventory.   |
| ProcGetBrowseLinks           | DIGranuleBrowseXref<br>DIFilesToDelete                               |                         | Insert into DIFilesToDelete all links from browse granules that are associated with science granules that qualify for deletion. |
| ProcGetBrowseToDelete        | DIFilesToDelete  |                         | Select all browse links from DIFilesToDelete.   |
| ProcGetCollGrp               | DICollectionGroup  |                         | Retrieves a row from DICollectionGroup for a specific collection group.   |
| ProcGetCollNotInDataPool     | DsMdCollections<br>DICollections                                     |                         | Retrieves the collections that are not yet in the Data Pool.  |
| ProcGetCollectionDescription | DICollections  |                         | Retrieves the collection description for a specific collection.   |
| ProcGetCollections           | DICollections  |                         | Retrieves all collection from DICollections for a specific collection group.  |
| ProcGetDayNightKey           | DIDimensionDayNight  |                         | This procedure gathers the dayNightKey for a specific dayNightValue.  |
| ProcGetDayNightKeyMap        | DIDimensionDayNight  |                         | This procedure gathers the mapping of dayNightKey and dayNightKeyValue.   |
| ProcGetDayNightSummary       | DIDimensionDayNight  | ProcGetOverallSummaries | This procedure gathers the counts of granules for each dayNightKey. All values of the dimension table are output.               |
| ProcGetESDTSummary           | DIDimensionGroupESDT<br>DIFactGroupESDT                              | ProcGetOverallSummaries | This procedure gathers the counts of granules for each groupESDTKey given a groupKey  |
| ProcGetFileVolumeGroup       | DsMdBrowse<br>DsMdGranules<br>DsStVolumeGroup<br>DsStConfigParameter |                         | Retrieve stmgmt Volume related info' based on specified granule or browse id's insert time                                      |

**Table 2-58. List of Stored Procedures (6 of 26)**

| Name                     | Table Accessed  | Stored Procedure Called                            | Description  |
|--------------------------|---|--|--|
| ProcGetFreeSpace         | DIFilesToDelete   |  | Calculate the sum of the file sizes of all files that were successfully removed.   |
| ProcGetGranAltFile       | DsMdInputGranule<br>DsMdFileStorage<br>DsMdGrIntegerInforContent<br>DsDeDictionaryAttribute |  | For the specified granule id, locate input granule id from DsMdInputGranule and get userfile for this input granuleid and append pathrow info to userfile name |
| ProcGetGranCollGroupName | DICollections   |  | Get the collection group id for the specified collection.  |
| ProcGetGransByLimit      | DIFilesToDelete<br>DITempGrans  | ProcInsertCleanupParams<br>ProcGetProcAttributeInt | Insert into DIFilesToDelete all files from granules which have expired and have priority less than a given limit.  |
| ProcGetGransByTable      | DIFilesToDelete<br>DITempGrans  | ProcGetProcAttributeInt                            | Populate DIFilesToDelete with info for the granules in DITempGrans. This table is pre-loaded and created via the cleanup script for Data Pool.                 |
| ProcGetGranules          | DIGranules<br>DIFile<br>DIBrowseFile<br>DIGranuleBrowseXref<br>DIMeasuredParameter          | ProcGetOverallSummaries                            | Gathers the granule data associated with the all granuleId limited by max granule count.   |
| ProcGetGroupESDTKeyMap   | DIDimensionGroupESDT  |  | This procedure gathers the mapping of groupESDTKey and groupESDTVValue.  |
| ProcGetGroupESDTKeys     | DIDimensionGroupESDT  |  | This procedure gathers the groupESDTKey for a specific collection.   |
| ProcGetGroupSummary      | DIDimensionGroupESDT<br>DIFactGroupESDT   | ProcGetOverallSummaries                            | Gathers the counts of granules for each groupKey   |
| ProcGetIAQList           | DIIInsertActionQueue  |  | Get all insert actions that have never been processed or actions that are in retry state.  |
| ProcGetIAQNewActions     | DIIInsertActionQueue  |  | Return all insert actions queued after this input queueid.   |

**Table 2-58. List of Stored Procedures (7 of 26)**

| Name                       | Table Accessed  | Stored Procedure Called | Description  |
|----------------------------|---|-------------------------|--|
| ProcGetInsertQueue         | DlInsertActionQueue   |                         | Retrieves all the inserts that have not been processed or whose status is not “FAILED”, “CANCELLED”, or “DONE” in the DlInsertActionQueue table. |
| ProcGetInsertsSuspended    | DIProcesses   |                         | Return suspendFlag value.  |
| ProcGetLinksToDelete       | DIFilesToDelete   |                         | Select all browse links from DIFilesToDelete.  |
| ProcGetMaxSpatialKeys      | DIDimensionSpatial  |                         | This procedure gathers the maximum set of spatial keys that touch a given spatial key.   |
| ProcGetMaxTemporalKeys     | DIDimensionTemporal   |                         | This procedure gathers the maximum set of temporal keys given a begin date and an end date.  |
| ProcGetMaxTimeOfDayKeys    | DIDimensionTimeOfDay  |                         | This procedure gathers the maximum set of time of day keys given a begin time and an end time.   |
| ProcGetMinTemporalKeys     | DIDimensionTemporal   |                         | This procedure gathers the minimum set of temporal keys given a begin date and an end date.  |
| ProcGetMinTimeOfDayKeys    | DIDimensionTimeOfDay  |                         | This procedure gathers the minimum set of time of day keys given a begin date and an end date.   |
| ProcGetMissingXrefInfo     | DsMdBrowseGranuleXref<br>DsMdGranules<br>DICollections<br>DIGranules<br>DIGranuleBrowseXref |                         | Get datapool granules that are yet to be linked to a specified browse.   |
| ProcGetMonthTemporalKey    | DIDimensionTemporal   |                         | This procedure gathers the temporalKey for a specific month.   |
| ProcGetNoFreeSpace         | DIState   |                         | Return NoFreeSpaceFlag value.  |
| ProcGetNoFreeSpaceWLastUpd | DIState   |                         | Return NoFreeSpaceFlag value, and lastUpdate value.  |

**Table 2-58. List of Stored Procedures (8 of 26)**

| Name                         | Table Accessed                       | Stored Procedure Called  | Description  |
|------------------------------|--------------------------------------|--------------------------|--|
| ProcGetNotInDataPoolDe sc    | DsMdCollections                      |                          | Retrieves the description for a collection that has not yet been added to the Data Pool.   |
| ProcGetOrphanedBrowse        | DIFilesToDelete                      |                          | Gets a list of orphaned browse from the table DIFilesToDelete.   |
| ProcGetOverallSummarie s     | DIGranules                           |                          | This procedure gathers the overall count, size in MB, and percent of the Datapool DB.  |
| ProcGetProcAttributeInt      | DIProcAttributes                     |                          | Select the integer value of a given attribute name and a store procedure name.   |
| ProcGetQAKeys                | DIDimensionQA                        |                          | This procedure gathers the qaKey for a specific QA parameter and its science QA flag.  |
| ProcGetQAParamValueK eyMap   | DIDimensionQA                        |                          | This procedure gathers the mapping of qaKey and qaValue.   |
| ProcGetQASummary             | DIDimensionQA                        | ProcGetOverallSu mmaries | This procedure gathers the counts of granules for each qaKey.  |
| ProcGetScienceAquisitionDate | DsMdGranules                         |                          | Return BeginningDateTime or EndingDateTime, if the former is not present, or NULL , if both are not present for the specified granule. |
| ProcGetScienceGranuleF iles  | DsMdGranules<br>DsMdFileStorage      |                          | Identify files associated with a science granule in SDSRV inventory.   |
| ProcGetScienceToDelete       | DIFilesToDelete                      |                          | Select all science and metadata files that are in DIFilesToDelete.   |
| ProcGetSdsrvBrowseGra nule   | DsMdBrowseGranuleXr ef<br>DsMdBrowse |                          | Retrieve associated browse granule for the specified science granule from SDSRV inventory.   |
| ProcGetSpatialSearchTy pe    | DsGeESDTConfiguredT ype              |                          | Retrieves the spatial search type for a collection.  |
| ProcGetSuspendFlag           | DIProcesses                          |                          | Retrieves suspendFlag, and lastUpdate from DIState table.  |

**Table 2-58. List of Stored Procedures (9 of 26)**

| Name                        | Table Accessed   | Stored Procedure Called     | Description   |
|-----------------------------|--|-----------------------------|---|
| ProcGetTempDayNightSummary  | DIDimensionDayNight  | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each dayNightKey given a vector of granuleIds. All values of the dimension table are output |
| ProcGetTempESDTSummary      | DIDimensionGroupESDT<br>DIFactGroupESDT                                  | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each groupESDTKey given a vector of granuleIds and a groupKey.                              |
| ProcGetTempGranules         | DIGranules<br>DIGranuleBrowseXref<br>DIBrowseFile<br>DIMeasuredParameter | ProcGetTempOverallSummaries | This procedure gathers the granule data associated with the given vector of granuleIds.   |
| ProcGetTempGroupSummary     | DIDimensionGroupESDT<br>DIFactGroupESDT                                  | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each groupKey given a vector of granuleIds.   |
| ProcGetTempOverallSummaries | DIGranules   |                             | This procedure gathers the overall count, size in MB, and percent of the Datapool DB for a vector of granuleIds.                              |
| ProcGetTempQASummary        | DIDimensionQA  | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each qaKey given a vector of granuleIds.  |
| ProcGetTemporalSummary      | DIDimensionTemporal  | ProcGetOverallSummaries     | This procedure gathers the counts of granules for each temporalKey given a vector of granuleIds and monthKey.                                 |
| ProcGetTempTemporalSummary  | DIDimensionTemporal<br>DIFactTemporal                                    | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each temporalKey given a vector of granuleIds and monthKey.                                 |
| ProcGetTempTimeOfDaySummary | DIDimensionTimeOfDay   | ProcGetTempOverallSummaries | This procedure gathers the counts of granules for each timeOfDayKey given a vector of granuleIds.   |
| ProcGetTimeOfDaySummary     | DIDimensionTimeOfDay   | ProcGetOverallSummaries     | This procedure gathers the counts of granules for each timeOfDayKey.  |

**Table 2-58. List of Stored Procedures (10 of 26)**

| Name                          | Table Accessed                          | Stored Procedure Called | Description  |
|-------------------------------|---|-------------------------|--|
| ProcGetTotalInsertQueue       | DlInsertActionQueue                     |                         | Retrieves the total inserts that have not been processed or whose status is not “FAILED”, “CANCELLED”, or “DONE” in the DlInsertActionQueue table. |
| ProcGetVolumeGroups           | DsStVolumnGroup<br>DsStConfigParameter  |                         | Return volume group details  |
| ProcGranuleEligibleForInsert  | DICollections                           |                         | Based on input params - shortname, version and metadata flag, determine what is eligible for insert  |
| ProclnsertAIP                 | DIActiveInsertProcesses                 |                         | Insert new active process details into DIActiveInsertProcesses   |
| ProclnsertAccessRollup        | DIAccessRollUp                          |                         | Inserts the rollupdatetime for a specific access rollup period.  |
| ProclnsertBrowseFile          | DIBrowseFile                            |                         | Insert browse file details into DIBrowseFile; Execute this procedure in chained mode   |
| ProclnsertCleanupParams       | DICleanupParameters                     |                         | Inserts a row into DICleanupParameters.  |
| ProclnsertCollGrp             | DICollectionGroup                       |                         | Insert a new collection group to DICollectionGroup table.  |
| ProclnsertCollections         | DICollections                           |                         | Insert a row to the DICollections table.   |
| ProclnsertDIFactSpatial       | DIDimensionPolygonXref<br>DIFactSpatial |                         | Insert a row into DIFactSpatial for orbit data.  |
| ProclnsertDIFile              | DIFile                                  |                         | Insert granule file details into DIFile; Execute this proc in chained mode   |
| ProclnsertFtpGranuleAccess    | DIGranuleAccess                         | ProclnsertAccess Rollup | Inserts data into DIGranuleAccess for access type FTP.   |
| ProclnsertGranuleBrowseXref   | DIGranuleBrowseXref                     |                         | Insert xrefs into DIGrauleBrowseXref   |
| ProclnsertGranuleSubscription | DIGranuleSubscription                   |                         | Insert into DIGranuleSubscription; Execute this proc in chained mode   |

**Table 2-58. List of Stored Procedures (11 of 26)**

| Name                       | Table Accessed                            | Stored Procedure Called | Description   |
|----------------------------|---|-------------------------|---|
| ProcInsertWebGranuleAccess | DIGranuleAccess                           | ProcInsertAccessRollup  | Inserts data into DIGranuleAccess for access type http.   |
| ProcIsBrowseFileInvented   | DIBrowseFile                              |                         | Check if this directory path/filename already exists in DIBrowseFile  |
| ProcIsNonCacheLimitReached | DIActiveInsertProcesses                   |                         | Find if # of noncache processes in ActiveInsertProcesses reached config limit   |
| ProcIsScienceFileInvented  | DIFile                                    |                         | Check if this directory path/filename already exists in DIFile  |
| ProcRemoveDeletedBrowses   | DIFilesToDelete                           |                         | Removes all browse granules whose browse files have been deleted successfully in a previous run from DIFilesToDelete. |
| ProcRemoveDeletedLinks     | DIFilesToDelete                           |                         | Removes all granules whose browse files have been deleted successfully in a previous run from DIFilesToDelete.        |
| ProcRemoveDeletedScis      | DIFilesToDelete                           |                         | Removes all granules whose files have been deleted successfully in a previous run from DIFilesToDelete                |
| ProcRemoveGoodDeletes      | DIFilesToDelete                           |                         | Clears all rows whom has state equal to zero.   |
| ProcResetMarkers           | DICleanupParameters                       |                         | Clears all markers from DICleanupParameters used in recovery.   |
| ProcResolveTemporalKey     | DIDimensionTemporal                       |                         | This procedure gathers the temporalKey for a specific period range.   |
| ProcResolveTimeOfDayKey    | DIDimensionTimeOfDay                      |                         | This procedure gathers the timeOfDayKey for a specific period range.  |
| ProcSelectGrExpiration     | DIGranules<br>DIGranuleExpirationPriority |                         | Retrieves the SizeMBECSDataGranule, ShortName, VersionId, expirationDate, retentionPriority for a specific granule.   |

**Table 2-58. List of Stored Procedures (12 of 26)**

| Name                          | Table Accessed              | Stored Procedure Called | Description  |
|-------------------------------|-----------------------------|-------------------------|--|
| ProcTruncateCleanupParams     | DICleanupParameters         |                         | Truncate DICleanupParameters table.  |
| ProcTruncateTemGrans          | DITempGrans                 |                         | Truncate DITempGrans table.  |
| ProcUpdateAIPStatus           | DIActiveInsertProcesses     |                         | Update 'status' and 'lastStatusChangeTime' columns of the specified process to reflect different transition states during insert process |
| ProcUpdateAIPdbid             | DIActiveInsertProcesses     |                         | Create an image of 'old' dbid details in DIActiveInsertProcesses for the specified 'new' dbid  |
| ProcUpdateBadStates           | DIFilesToDelete             |                         | Reset the state of all rows in DIFilesToDelete to 0.   |
| ProcUpdateBrowseDllInsertTime | DIBrowse                    |                         | update dllInsertTime for the specified browse. Execute this proc in chained mode   |
| ProcUpdateBrowseState         | DIFilesToDelete             |                         | Updates the state of the supplied browse file to 1.  |
| ProcUpdateCleanupParams       | DICleanupParameters         |                         | Update or insert a row in DICleanupParameters based upon whether or not it already exists.   |
| ProcUpdateCollGrpDescription  | DICollectionGroup           |                         | Updates the collection group description for a specific collection group.  |
| ProcUpdateCollections         | DICollections               |                         | Updates the exclusionSCFlag and esdtValidationFlag for a specific collection.  |
| ProcUpdateConfigParms         | DIActionConfig              |                         | Updates all configuration parameters in DIActionConfig.  |
| ProcUpdateFreeSpaceFlag       | DIState                     |                         | Sets the NoFreeSpace flag to "N" and resets the update datetime.   |
| ProcUpdateGrExpiration        | DIGranuleExpirationPriority |                         | Updates the expirationDate and retentionPriority for a specific granule.   |
| ProcUpdateGranDllInsertTime   | DIGranules                  |                         | update dllInsertTime for the specified granule. Execute this proc in chained mode  |

**Table 2-58. List of Stored Procedures (13 of 26)**

| Name                                     | Table Accessed   | Stored Procedure Called | Description  |
|--|--|-------------------------|--|
| ProcUpdateGranState                      | DIFilesToDelete  |                         | Update the state of the science granule to 1.  |
| ProcUpdateLinkState                      | DIFilesToDelete  |                         | Update the state of the supplied link to 1.  |
| ProcUpdateNoFreeSpace                    | DIState  |                         | Updates the NoFreeSpaceFlag and lastUpdate in DIState table.   |
| ProcUpdateRefreshRate                    | DIActionConfig   |                         | Updates the RefreshRate value in DIActionConfig table.   |
| ProcUpdateSuspendFlag                    | DIProcesses  |                         | Updates the suspendFlag and lastUpdate column in DIProcesses table for INSERT.   |
| <b>New Synergy III Stored Procedures</b> |  |                         |  |
| ProcGetGransToBeUpdated                  | DIUpdGranulesTemp<br>DIGransToBeUpdated<br>DIThemes<br>DIGranuleThemeXref<br>DIGranules<br>DIGranuleExpirationPriority |                         | Loads DIGransToBeUpdated table from the granules in DIUpdGranulesTemp table.   |
| ProcGetInvalidInputGranules              | DIUpdGranulesTemp  |                         | Select all granules that are invalid for update.   |
| ProcGetUpdateGranulesSummary             | DIGranulesToBeUpdated  |                         | Obtain summary information from the DIGranulesToBeUpdated table based on the status passed in.   |
| ProcGetThemeld                           | DIThemes   |                         | Get themeld for a given theme name.  |
| ProcGetGransToBeUpdatedByTheme           | DIThemeXref<br>DIGranuleExpirationPriority<br>DIGranules   |                         | Load into a temporary table, DIGransToBeUpdated, with a list of qualified granules associated with a given theme ID that satisfies the following condition:<br>current expiration date is prior to a specified expiration date (or)<br>current retention priority is less than a specified retention priority. |

**Table 2-58. List of Stored Procedures (14 of 26)**

| Name                        | Table Accessed                                    | Stored Procedure Called     | Description  |
|-----------------------------|---|-----------------------------|--|
| ProcUpdateGrExpPri          | DIGransToBeUpdated<br>DIGranuleExpirationPriority | ProcGetProcAttrib<br>uteInt | <p>Update the granules expiration dates and priorities in the DP inventory using information stored in the DIGransToBeUpdated table. The steps involved are as follows:</p> <p>Perform granule update in batches using a configured batch size obtained from DIProcAttributes table.</p> <p>Set the state of the granules that have been successfully updated to success (1) in DIGransToBeUpdated table as each batch gets updated.</p> <p>Return the total number and size of granules successfully updated.</p> |
| ProcGetXmlFilePath          | DlInsertActionQueue                               |                             | Get xmlFileName based on the insQueueId that passed in.  |
| ProcGetInsertQueueBatch     | DlInsertActionQueue                               |                             | Select Insert Action Queue information for a specified batchLabel.   |
| ProcGetInsertQueueStatus    | DlInsertActionQueue                               |                             | Select Insert Action Queue information for a specified status.   |
| ProcGetInsertQueueBoth      | DlInsertActionQueue                               |                             | Select Insert Action Queue information for a specified batch label and status.   |
| ProcUpdateNonECSCollections | DICollections                                     |                             | Update a specific Non-ECS collection.  |
| ProcGetAllThemes            | DIThemes  |                             | Get a list of detailed theme information.  |
| ProcDeleteTheme             | DIThemes  |                             | Delete a specified theme from DIThemes   |
| ProcInsertTheme             | DIThemes  |                             | Insert a theme into DIThemes.  |
| ProcGetThemeByInsertEnabled | DIThemes  |                             | Get a list of theme information based on the value of the insertEnabledFlag.   |

**Table 2-58. List of Stored Procedures (15 of 26)**

| Name                        | Table Accessed   | Stored Procedure Called                                    | Description  |
|-----------------------------|--|--|--|
| ProcGetThemeByWebEnabled    | DIThemes   |  | Get a list of theme information based on the value of the webVisibleFlag.  |
| ProcGetBatchSummary         | DlInsertActionQueue  |  | Get a summary count of granules in the insertActionQueue base on the status of Pending, Completed and Failed for all batch label.  |
| ProcDeleteAssocThemeXref    | DIGranuleThemeXref<br>DIFilesToDelete  |  | This procedure will remove all granule cross-references from the DIGranuleThemeXref table associated with the granules in the DIFilesToDelete table.   |
| ProcGetGransLimitByTheme    | DIGranules<br>DIFilesToDelete<br>DIFile<br>DIGranuleExpirationPriority<br>DIGranuleThemeXref | ProcInsertCleanup<br>Parameters<br>ProcGetProcAttributeInt | This procedure will insert into DIFilesToDelete all files for granules associated with a specific theme ID which have expired and have priority less than a given limit and not associated with any other theme. (See ProcGetGransByLimit procedure) |
| ProcRemoveThemeXref         | DIThemes   |  | This stored procedure removes all rows from the DIGranuleThemeXref table for a specific theme ID.  |
| ProcIsValidCollGroup        | DICollectionGroup  |  | This procedure validates if a specified collection groupId exists in the Data Pool.  |
| ProcGetCollectionsByGroupid | DICollectionGroup<br>DICollections   |  | This procedure returns the collectionId, ShortName, VersionId for a given collection groupId.  |
| ProcGetAllCollections       | DICollections  |  | Get a list of all collections in DP inventory.   |

**Table 2-58. List of Stored Procedures (16 of 26)**

| Name                          | Table Accessed  | Stored Procedure Called | Description  |
|-------------------------------|---|-------------------------|--|
| ProcGetFilesInDBByColl Group  | DIGranules<br>DIFile<br>DICollections<br>DICollectionGroup<br>DIGranuleBrowseXref<br>DIBrowse<br>DIBrowseFile |                         | Get a list of science, metadata, browse links and associated browse files for a given collection group order by directoryPath and fileName.  |
| ProcGetSciPhantomsToBeDeleted | DITempPhantoms<br>DIFile<br>DIFileToBeDeleted   |                         | This stored procedure puts the phantom science granules found in DITempPhantoms table into DIFilesToBeDeleted table.   |
| ProcGetBrPhantomsToBeDeleted  | DITempPhantoms<br>DIBrowseFile<br>DIFilesToBeDeleted  |                         | This stored procedure puts the phantom browse granules found in DITempPhantoms table into DIFilesToBeDeleted table.  |
| ProcGetAssocGransToBeDeleted  | DITempPhantoms<br>DIBrowseFile<br>DIGranuleBrowseXref<br>DIGranules<br>DIFilesToBeDeleted                     |                         | This procedures obtains a list of science granules (science and metadata files) that are associated with the phantom browse granules found in DITempPhantoms table and inserts them into DIFilesToBeDeleted table. |
| ProcTruncateTempPhantoms      | DITempPhantoms  |                         | This procedure truncates the DITempPhantoms table.   |
| ProcTruncateFilesToDelete     | DIFilesToBeDeleted  |                         | This procedure truncates the DIFilesToBeDeleted table.   |
| ProcGetAllBrowseFiles         | DIBrowseFile  |                         | This procedure returns a list of browse files in the DIBrowseFile table.   |

**Table 2-58. List of Stored Procedures (17 of 26)**

| Name                         | Table Accessed  | Stored Procedure Called | Description  |
|------------------------------|---|-------------------------|--|
| ProcUpdateGransExpPriority   | DIGransToBeUpdated<br>DIGranuleExpirationPriority<br>DIProcAttributes | None                    | <p>Update the granules expiration dates and priorities in the DP inventory using information stored in the DIGransToBeUpdated table. The steps involved are as follows:</p> <p>Perform granule update in batches using a configured batch size obtained from DIProcAttributes table.</p> <p>Set the state of the granules that have been successfully updated to success (1) in DIGransToBeUpdated table as each batch gets updated.</p> |
| ProcDropGransToBeUpdated     | DIGransToBeUpdated  | None                    | Deletes all existing granules in the DIGransToBeUpdated table.   |
| ProcFindDeleteOrphanedBrowse | DIFilesToDelete<br>DIBrowseFile                                       | ProcGetProcAttributeInt | Insert all orphaned browse into DIFilesToDelete and remove the obsolete browse from the inventory,   |
| ProcCartAddOrder             | DICartOrder<br>DIConfig   | ProcGetUniqueIDOutput   | This procedure inserts a new order into the DICartOrder table if there is room.  |
| ProcCartAddOrderItem         | DICartOrderItem   | ProcGetUniqueIDOutput   | This procedure inserts a new order item into the DICartOrderItem table.  |
| ProcCartHEGGetNewWork        | DICartOrder<br>DICartOrderItem<br>DIConfig                            |                         | This procedure allows the HEG Frontend to look for new work.   |
| ProcCartMarkFailedItems      | DICartOrderItem   |                         | This procedure allows the Packager component of Webaccess cart to mark order items as failed if the link script failed for any reason.   |

**Table 2-58. List of Stored Procedures (18 of 26)**

| Name                           | Table Accessed  | Stored Procedure Called | Description  |
|--------------------------------|---|-------------------------|--|
| ProcCartPkgGetNewWork          | DIConfig<br>DICartOrder                                   |                         | This procedure allows the Packager component of Webaccess cart to check for orders to complete.  |
| ProcCartUpdateOrderItemStatus  | DICartOrderItem   |                         | This procedure updates the status field in the DICartOrderItem table.  |
| ProcCartUpdateOrderStatus      | DICartOrder   |                         | This procedure updates the status and notes field in the DICartOrder table.  |
| ProcCleanUpECSIds              | DIECSIdsToInsert  |                         | This procedure deletes all rows in DIECSIdsToInsert containing this connection's spid (@pid).  |
| ProcCleanupXMLFiles            | DIXMLFilesToInsert  |                         | This procedure deletes all rows in DIXMLFilesToInsert containing this connection's spid (@pid).  |
| ProcCountPhantomBrowse         | DIFilesToDelete   |                         | This procedure returns the number of phantom browse files found.   |
| ProcCountPhantoms              | DIFilesToDelete<br>DIGranuleExpirationPriority            |                         | This procedure returns the number of phantom files found.  |
| ProcCountPhantomsDeleted       | DIFilesToDelete   |                         | This procedure will count the phantoms from the DIFilesToDelete table.   |
| ProcDeleteIneligibleGranuleIds | DIECSIdsToInsert<br>DIIinsertActionQueue<br>DICollections |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert for the following reasons:<br>Already queued in DIIinsertActionQueue<br>Marked as DFA or logically deleted in SDSRV DB<br>Not in SDSRV DB<br>In collection not enabled for insert |

**Table 2-58. List of Stored Procedures (19 of 26)**

| Name                         | Table Accessed   | Stored Procedure Called | Description  |
|------------------------------|--|-------------------------|--|
| ProcDeleteIneligibleXMLFiles | DIXMLFilesToInsert<br>DICollections<br>DlInsertActionQueue |                         | This procedure deletes all xml files from DIXMLFilesToInsert that are ineligible for insert for the following reasons:<br>Associated with non-existent collection<br>Already queued in DlInsertActionQueue<br>In collection not enabled for insert |
| ProcGetBatchLabels           | DlInsertActionQueue  |                         | This procedure returns all unique batch label from DlInsertActionQueue.  |
| ProcGetCollInsertEnabledFlag | DICollections  |                         | This procedure returns the value of insertEnabledFlag from DICollections table.  |
| ProcGetCollectionId          | DICollections  |                         | This procedure returns the collectionId from DICollections table.  |
| ProcGetDbIdFromLocGrnld      | DsMdGranules   |                         | This procedure gets the dbId(s) for a local granule id.  |
| ProcGetDeletedGranIds        | DIECSIdsToInsert   |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert because they are marked as DFA or logically deleted in SDSRV DB.  |
| ProcGetEcsBrowseGranuleFiles | DsMdBrowse<br>DsMdBrowseFileStorage                        |                         | This procedure identifies files associated with a browse granule in SDSRV inventory.   |
| ProcGetEcsBrowseInternalId   | DIBrowse   |                         | This procedure gets DPL internal browse id base on the ecsid.  |
| ProcGetEcsGranuleId          | DIGranules   |                         | This procedure retrieves the granuleId from the DIGranules table, based on the provided ecsid.   |

**Table 2-58. List of Stored Procedures (20 of 26)**

| Name                         | Table Accessed   | Stored Procedure Called | Description   |
|------------------------------|--|-------------------------|---|
| ProcGetEcsMissingXrefIn fo   | DsMdBrowseGranuleXr ef<br>DsMdGranules<br>DICollections<br>DIGranules<br>DIGranuleBrowseXref |                         | This procedure gets DPL granules are yet to be linked to this browse.   |
| ProcGetEcsScienceIntern alId | DIGranules   |                         | This procedure gets DPL internal granuleId based on the ecsid.  |
| ProcGetEDGDataPoolIn fo      | DIGranules<br>DIGranuleExpirationPriority<br>DIFile<br>DIGranuleBrowseXref<br>DIBrowseFile   |                         | This procedure retrieves all necessary URL information for a particular ecs granule id to allow the EDG to display DPL inventory information to a user.           |
| ProcGetHEGToDelete           | DICartOrder  |                         | This procedure gets all cart orders that are qualified for deletion.  |
| ProcGetInsQueueChunk Size    | DIConfig   |                         | This procedure gets the insert queue chunk size for the DPM GUI.  |
| ProcGetNoCollGranIds         | DIECSIdsToInsert<br>DICollections  |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert because their collections are not in DICollections.              |
| ProcGetNoColIXMLFiles        | DIXMLFilesToInsert<br>DICollections  |                         | This procedure gets all XML filenames for granules from DIXMLFilesToInsert that are ineligible for insert because their collections are not in DICollections.     |
| ProcGetNoInsertGranIds       | DIECSIdsToInsert   |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert because they are in collections not enabled for insert.          |
| ProcGetNoInsertXMLFile s     | DIXMLFilesToInsert<br>DICollections  |                         | This procedure gets all XML filenames for granule from DIXMLFilesToInsert that are ineligible for insert because they are in a collection not enabled for insert. |

**Table 2-58. List of Stored Procedures (21 of 26)**

| Name                           | Table Accessed   | Stored Procedure Called | Description   |
|--------------------------------|--|-------------------------|---|
| ProcGetNonECSCollections       | DICollections  |                         | This procedure returns all non-ecs collections.   |
| ProcGetNonEcsBrowseFiles       | DIBrowseFile<br>DIBrowse   |                         | This procedure gets files associated with a browse in DPL inventory.  |
| ProcGetNonEcsBrowseInternalId  | DIBrowse   |                         | This procedure gets DPL internal browse id based on ecsid.  |
| ProcGetNonEcsGranuleFiles      | DIFile<br>DIGranules   |                         | This procedure gets the filename and filetype for a non-ecs granule.  |
| ProcGetNonEcsScienceInternalId | DIGranules   |                         | This procedure gets DPL internal granule id based on ecsid.   |
| ProcGetNonExistGranIds         | DIECSIdsToInsert   |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert because they are not in SDSRV database.                  |
| ProcGetNonExistGrans           | DITempGrans  |                         | This procedure reads through the DITempGrans temporary table (built from the user input file) and reports any granules not found in the DIGranules table. |
| ProcGetOrderMgtConfig          | DIConfig   |                         | This procedure gets order management operator config parameters   |
| ProcGetPhantomBrowseDetails    | DIFilesToDelete<br>DIGranuleBrowseXref   |                         | This procedure gets a list of phantom browse files from DIFilesToDelete.  |
| ProcGetPhantomDetails          | DIFilesToDelete<br>DIGranules<br>DIGranuleExpirationPriority<br>DIGranuleThemeXref<br>DIThemes |                         | This procedure gets a list of phantoms from DIFilesToDelete.  |
| ProcGetQueuedGranIds           | DIECSIdsToInsert<br>DIInsertActionQueue  |                         | This procedure gets all ECS ids of granules from DIECSIdsToInsert that are ineligible for insert because they are already queued in DIInsertActionQueue.  |

**Table 2-58. List of Stored Procedures (22 of 26)**

| Name                          | Table Accessed                            | Stored Procedure Called | Description  |
|-------------------------------|---|-------------------------|--|
| ProcGetQueuedXMLFiles         | DIXMLFilesToInsert<br>DlInsertActionQueue |                         | This procedure gets all XML filenames for granule from DIXMLFilesToInsert that are ineligible for insert because they are already queued in DlInsertActionQueue. |
| ProcGetSCToBeDeleted          | DIFilesToDelete                           |                         | This procedure puts the granuleId into a temp table, which use for cleanup the DPL inventory.  |
| ProcGetSDSRVData              | DIECSIdsToInsert<br>DsMdGranules          |                         | This procedure loads all necessary granule data from SDSRV<br>DsMdGranules table into temp table for subsequent processing.                                      |
| ProcGetScienceQAKey           | DIDimensionMP<br>DIDimensionScienceQA     |                         | This procedure returns the QA keys based on the specified parameter name and the QA flag.  |
| ProcGetTempThemeSummary       | DIThemes<br>DIGranuleThemeXref            |                         | This procedure gets count of granules grouped for each theme category given a vector of granuleids.  |
| ProcGetThemeByBeginningLetter | DIThemes                                  |                         | This procedure returns the theme information based on the beginning letter of a theme.   |
| ProcGetThemeByFilters         | DIThemes                                  |                         | This procedure returns the theme information based on the filters that pass in.  |
| ProcGetThemeData              | DIThemes                                  |                         | This procedure gets the theme id and insertEnabled flag for a theme name.  |
| ProcGetThemeKey               | DIThemes                                  |                         | This procedure returns all theme key.  |
| ProcGetThemeKeyMap            | DIThemes                                  |                         | This procedure returns the value key map for theme search.   |
| ProcGetThemeSummary           | DIThemes<br>DIGranuleThemeXref            |                         | This procedure returns granule count for each theme.   |
| ProcGetUniqueIDOutput         | DlIdentifier                              |                         | This procedure returns an unique DPL internal id as part of the output parameter based on the object type.   |

**Table 2-58. List of Stored Procedures (23 of 26)**

| Name                           | Table Accessed  | Stored Procedure Called   | Description  |
|--------------------------------|---|---------------------------|--|
| ProcGetUniquelId               | DIdentifier   |                           | This procedure returns an unique DPL internal id based on the object type.                       |
| ProclnsertBrowse               | DIBrowse  |                           | This procedure inserts a row into DIBrowse table.  |
| ProclnsertECSActions           | DIECSIdsToInsert<br>DInsertActionQueue<br>DICollections   |                           | This procedure inserts actions for granules in DIECSIdsToInsert into DInsertActionQueue table.   |
| ProclnsertGrExpirationPriority | DIGranuleExpirationPriority                               |                           | This procedure inserts a row into DIGranuleExpirationPriority table.                             |
| ProclnsertGranules             | DIGranules  |                           | This procedure inserts a granule into DIGranules table.  |
| ProclnsertMeasuredParameter    | DIMeasuredParameter                                       |                           | This procedure inserts a row into the DIMeasuredParameter table.                                 |
| ProclnsertNonECSActions        | DInsertActionQueue<br>DIXMLFilesToInsert<br>DICollections |                           | This procedure inserts actions for granules in DIXMLFilesToInsert into DInsertActionQueue table. |
| ProclnsertNonECSCollections    | DICollections   | ProcGetUniqueID<br>Output | This procedure inserts a non-ecs collection into DPL.  |
| ProclnsertNonEcsGranule        | DIGranules  |                           | This procedure inserts a row into DIGranules for non-ecs granule.                                |
| ProclnsertOrbitCalSpatial      | DOOrbitCalculatedSpatial                                  |                           | This procedure inserts a row into DOOrbitCalculatedSpatial table.                                |
| ProclnsertXMLInfo              | DIXMLFilesToInsert  |                           | This procedure inserts info for a non-ECS XML file into the DIXMLFilesToInsert table.            |
| ProclsCollectionEcs            | DICollectionGroup<br>DICollections                        |                           | This procedure gets ecsFlag value for a specified ESDT.  |
| ProclsEcsBrowseInDataPool      | DIBrowse  |                           | This procedure checks whether the specified browse is present in DPL inventory.                  |

**Table 2-58. List of Stored Procedures (24 of 26)**

| Name                          | Table Accessed   | Stored Procedure Called | Description  |
|-------------------------------|--|-------------------------|--|
| ProcIsEcsGranuleProcessing    | DIActiveInsertProcesses  |                         | This procedure checks whether a record with the specified dbld exists in DIActiveInsertProcesses.  |
| ProcIsEcsGranuleInDataPool    | DIGranules   |                         | This procedure checks whether the specified granule is present in DPL inventory.   |
| ProcIsGranuleThemeXref        | DIGranuleThemeXref   |                         | This procedure determines whether a granule theme cross-reference exists in DIGranuleThemeXref.  |
| ProcIsNonEcsBrowseInDataPool  | DIBrowse<br>DIBrowseFile                                       |                         | This procedure determines whether a non-ecs browse exists in DPL.  |
| ProcIsNonEcsGranuleInDataPool | DIGranules<br>DIFile<br>DICollections                          |                         | This procedure determines whether a non-ecs granule exists in DPL.   |
| ProcIsNonEcsBrowseReady       | DIBrowse   |                         | This procedure checks whether the browse exists for the granule.   |
| ProcIsNonEcsGranuleInserted   | DIGranules   |                         | This procedure checks whether the granule exists in DIGranules.  |
| ProcIsNonEcsGranuleProcessing | DIActiveInsertProcesses  |                         | This procedure checks whether a record with the specified non-ecs granule exists in DIActiveInsertProcesses.   |
| ProcIsNonEcsGranuleReady      | DIGranules<br>DICollections<br>DIBrowse<br>DIGranuleBrowseXref |                         | This procedure checks whether a bunch of external grauleids already in DPL when a browse arrives alone.  |
| ProcIsSciGranuleGlobal        | DsMdGranules<br>DsGeESDTConfiguredType<br>DsMdGranuleLocality  |                         | Retrieves the info to if the specified sci granule is a global granule or not. The client code will implement the rules for global granules determination. |
| ProcIsThemeEnabled            | DIThemes   |                         | This procedure checks whether insert enabled for a specified theme.  |

**Table 2-58. List of Stored Procedures (25 of 26)**

| Name                         | Table Accessed   | Stored Procedure Called | Description  |
|------------------------------|--|-------------------------|--|
| ProcMakeThemeRetroactive     | DIThemes<br>DIGranuleThemeXref<br>DIGranuleSubscription                      |                         | This procedure associates all granules in the data pool which were previously inserted because of a subscription with theme that is now associated with that subscription. |
| ProcNumOfObjects             | sysobjects   |                         | This procedure returns the tables, procedures, triggers and view count for the database.   |
| ProcOSGetDplDeletedURL       | DIFilesToDelete<br>DICollections   |                         | This procedure retrieves the deleted granuleId(s) from DPL.  |
| ProcOSGetDplURL              | DIGranules<br>DIFile<br>DICollections<br>DIGranuleBrowseXref<br>DIBrowseFile |                         | This procedure retrieves ftp URLs.   |
| ProcRemoveThemeXrefForThemes | DIGranuleThemeXref<br>DIFilesToDelete  |                         | This procedure removes all rows from DIGranuleThemeXref table for a specific theme ID as long as there is an associated entry in the DIFilesToDelete table.                |
| ProcThemeEnabledForInsert    | DIThemes   |                         | This procedure checks whether the theme is enabled for DPL insert.   |
| ProcUpdNonEcsGranInsertTime  | DIGranules   |                         | This procedure updates the insert time for non-ecs granules.   |
| ProcUpdateHEGOrder           | DICartOrder  |                         | This procedure updates the archiveFlag for a specified orderId.  |
| ProcUpdateInsQueueChunkSize  | DIConfig   |                         | This procedure updates the insert chunk size which uses in the DPM GUI.  |
| ProcUpdateOrderMgtConfig     | DIConfig   |                         | This procedure updates order management operator config parameters   |
| ProcUpdatePeriodPriority     | DIGranuleExpirationPriority  |                         | This procedure updates the retentionPriority and expiration date based on the provided granuleid.  |

**Table 2-58. List of Stored Procedures (26 of 26)**

| Name                      | Table Accessed      | Stored Procedure Called | Description   |
|---------------------------|---------------------|-------------------------|---|
| ProcUpdateTheme           | DIThemes            |                         | This procedure updates a row in DIThemes for a specified theme.                       |
| ProcGetDayNightFlagKey    | DIDimensionDayNight |                         | This procedure returns the keys for day night search.                                 |
| ProcGetInsertQueueAll     | DlInsertActionQueue |                         | This procedure returns all requests with batch label and the specified status.        |
| ProcInsertSpatialFacts    | DIFactSpatial       |                         | This procedure inserts all rows for a specified granule based on the keys passed in.  |
| ProcUpdateDIStatGroupESDT | DIStatGroupESDT     |                         | This procedure inserts the statistics require for Web Drill Down for all ESDT groups. |
| ProcUpdateDIStatESDT      | DIStatESDT          |                         | This procedure inserts the statistics require for Web Drill Down for all ESDT(s).     |

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## 3. Order Manager

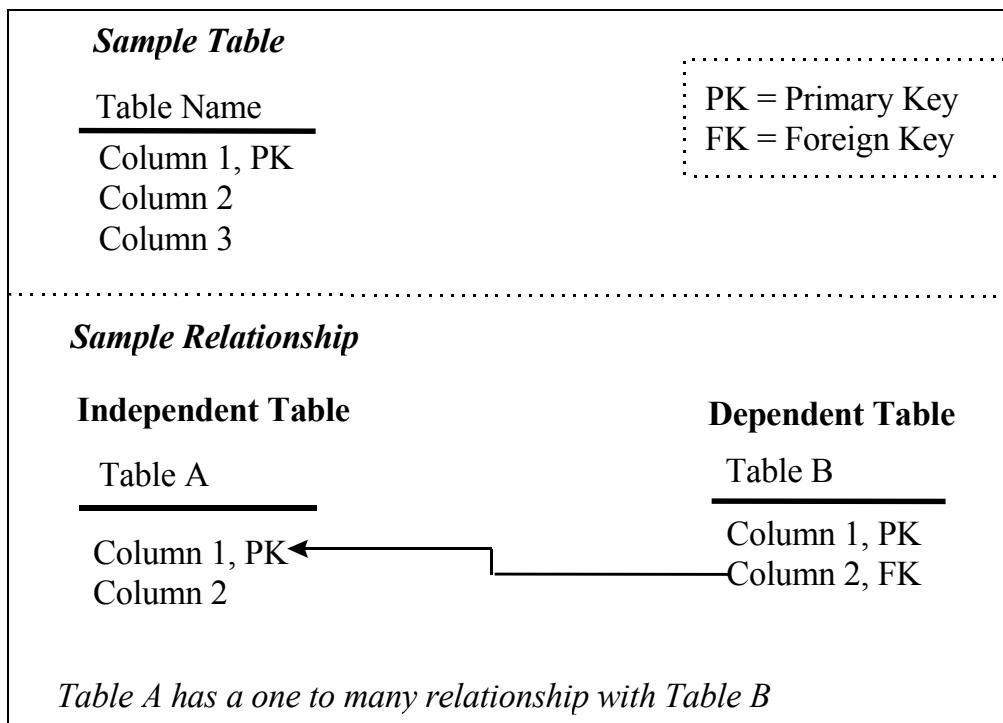
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### 3.1 Design Overview

The Order Manager Subsystem database implements the persistent data requirements for the Order Manager Subsystem. The database is designed to satisfy business rules while maintaining data integrity, consistency, and performance. Database tables are implemented using the Sybase Relational Database Management System (RDBMS) Version 12.5. All components of the Order Manager Subsystem database are described in the following sections; information is presented in sufficient detail to support operational needs.

#### 3.1.1 Physical Data Model Entity Relationship Diagram

An entity relationship diagram (ERD) was developed for use as a "roadmap" to the Order Manager Subsystem database. An ERD is a schematic of the physical data structure that illustrates the dependencies and relationships between database entities, i.e., tables. On ERDs, database entities are represented by rectangles and arrows as shown by the key in Figure 3-1. The ERD for the Order Manager is shown in Appendix B.



**Figure 3-1. Order Manager ERD Key**

### **3.1.2 Database Table Specifications**

Table 3-1 contains a listing of all the database tables within the Order Manager Subsystem databases. This list is presented in alphabetical order corresponding to the database tables illustrated in the ERD (see Appendix B).

***Table 3-1. Database Tables***

| Table Name             |
|------------------------|
| OmActionQueue          |
| OmBundlingOrder        |
| OmConfigParameter      |
| OmExplanation          |
| OmGranule              |
| OmMediaType            |
| OmNotification         |
| OmOperatorIntervention |
| OmQueue                |
| OmRequest              |
| OmRequestInterventions |
| OmRequestOptions       |
| OmStatus               |
| OmSubSettingInfo       |
| EcDbDatabaseVersions   |

The following tables correspond to the Table entries identified in Table 3-1. The column information includes the column name and attributes, i.e., type (format of the data stored within the database), primary key indicator(s), and a mandatory indicator for determining if the column must contain data when the row exists. In some cases the content of the column specification "Type" will reference a domain value (refer to Section 3.1.4 for more information on the domain values).

Table 3-2, OmActionQueue, represents the current set of actions that are queued. An action that is queued can be dispatched to either of the following:

1. OmServer – for request validation
2. ScienceDataServer - for Electronic Distribution Requests
3. PDS - for Distribution Requests using hard media.
4. Email – for Email Notification Requests

**Table 3-2. OmActionQueue**

| Name           | Code           | Type         | P   | M   |
|----------------|----------------|--------------|-----|-----|
| ActionQueueId  | ACTIONQUEUEID  | identlarge   | Yes | Yes |
| ActionType     | ACTIONTYPE     | char(1)      | No  | Yes |
| ActionPriority | ACTIONPRIORITY | tinyint      | No  | Yes |
| RequestId      | REQUESTID      | varchar(10)  | No  | Yes |
| NotificationId | NOTIFICATIONID | numeric(9)   | No  | No  |
| EnqueueTime    | ENQUEUETIME    | datetime     | No  | Yes |
| LastUpdate     | LASTUPDATE     | datetime     | No  | Yes |
| CompletionTime | COMPLETIONTIME | datetime     | No  | No  |
| RetryCount     | RETRYCOUNT     | tinyint      | No  | No  |
| ActionStatus   | ACTIONSTATUS   | tinyint      | No  | No  |
| Pid            | PID            | int          | No  | No  |
| DispatchInfo   | DISPATCHINFO   | varchar(100) | No  | No  |

Table 3-3, OmBundlingOrder, holds the information pertaining to bundled orders for which subscriptions will be submitted against.

**Table 3-3. OmBundlingOrder**

| Name                  | Code                  | Type        | P   | M   |
|-----------------------|-----------------------|-------------|-----|-----|
| BundlingOrderId       | BUNDLINGORDERID       | varchar(10) | Yes | Yes |
| BundlingOrderStatus   | BUNDLINGORDERSTATUS   | tinyint     | No  | Yes |
| RequestId             | REQUESTID             | varchar(10) | No  | Yes |
| MediaTypeId           | MEDIATYPEID           | tinyint     | No  | Yes |
| BundlingOrderPriority | BUNDLINGORDERPRIORITY | tinyint     | No  | Yes |
| ExpirationDate        | EXPIRATIONDATE        | datetime    | No  | Yes |
| MinBundleSize         | MINBUNDLESIZE         | float       | No  | Yes |
| MinBundleGranCnt      | MINBUNDLEGRANCNT      | int         | No  | Yes |
| MaxBundleAge          | MAXBUNDLEAGE          | float       | No  | Yes |
| LastAccess            | LASTACCEESS           | datetime    | No  | Yes |

Table 3-4 OmConfigParameter contains the dynamic configuration parameters for the OmServer. These parameters will be able to be modified without re-booting the OmServer.

**Table 3-4. OmConfigParameter**

| Name          | Code          | Type         | P   | M   |
|---------------|---------------|--------------|-----|-----|
| ConfigId      | CONFIGID      | identsmall   | Yes | Yes |
| ParameterName | PARAMETERNAME | varchar(50)  | No  | Yes |
| ParameterType | PARAMETERTYPE | varchar(1)   | No  | Yes |
| Units         | UNITS         | varachar(10) | No  | No  |
| ParameterDesc | PARAMETERDESC | varchar(100) | No  | Yes |
| IntValue      | INTVALUE      | int          | No  | No  |
| CharValue     | CHARVALUE     | varchar(50)  | No  | No  |
| FloatValue    | FLOATVALUE    | float        | No  | No  |

Table 3-5, OmExplanation, contains the static explanation associated with either a granule or a request that contains a non null status value.

**Table 3-5. OmExplanation**

| Name            | Code            | Type        | P   | M   |
|-----------------|-----------------|-------------|-----|-----|
| ExplanationCode | EXPLANATIONCODE | tinyint     | Yes | Yes |
| Explanation     | EXPLANATION     | varchar(75) | No  | Yes |

Table 3-6, OmGranule contains the granule specific information contained with each distribution request.

**Table 3-6. OmGranule**

| Name            | Code            | Type          | P   | M   |
|-----------------|-----------------|---------------|-----|-----|
| RequestId       | REQUESTID       | varchar(10)   | Yes | Yes |
| Gran_Id_No      | GRAN_ID_NO      | int           | Yes | Yes |
| GranuleId       | GRANULEID       | numeric(16,0) | No  | Yes |
| GranStatus      | GRANSTATUS      | tinyint       | No  | No  |
| ExplanationCode | EXPLANATIONCODE | tinyint       | No  | No  |
| GranuleSize     | GRANULESIZE     | float         | No  | Yes |
| EsdtType        | ESDTTYPE        | varchar(12)   | No  | No  |
| GranType        | GRANTYPE        | char(2)       | No  | No  |
| InsertDateTime  | INSERTDATETIME  | datetime      | No  | Yes |

Table 3-7, OmMediaType contains those parameters which are specific for each type of media.

**Table 3-7. OmMediaType**

| Name                  | Code                  | Type        | P   | M   |
|-----------------------|-----------------------|-------------|-----|-----|
| MediaTypeId           | MEDIATYPEID           | tinyint     | Yes | Yes |
| MediaType             | MEDIATYPE             | varchar(20) | No  | Yes |
| MediaCapacity         | MEDIACAPACITY         | float       | No  | Yes |
| LastUpdate            | LASTUPDATE            | datetime    | No  | Yes |
| MinBundleSize         | MINBUNDLESIZE         | float       | No  | Yes |
| MaxRequestSize        | MAXREQUESTSIZE        | float       | No  | Yes |
| PartitionGranuleLimit | PARTITIONGRANULELIMIT | int         | No  | Yes |
| PartitionSizeLimit    | PARTITIONSIZELIMIT    | float       | No  | Yes |
| QueueName             | QUEUENAME             | varchar(10) | No  | Yes |
| QSuspendState         | QSUSPENDSTATE         | char(1)     | No  | Yes |

Table 3-8, OmNotification, stores email notification information. The notification will be referenced by an action.

**Table 3-8. OmNotification**

| Name                   | Code                   | Type         | P   | M   |
|------------------------|------------------------|--------------|-----|-----|
| NotificationId         | NOTIFICATIONID         | identlarge   | Yes | Yes |
| RequestId              | REQUESTID              | varchar(10)  | No  | Yes |
| OperatorInterventionId | OPERATORINTERVENTIONID | numeric(9)   | No  | Yes |
| Notification Status    | NOTIFICATIONSTATUS     | tinyint      | No  | No  |
| LastUpdate             | LASTUPDATE             | datetime     | No  | Yes |
| OperatorText           | OPERATORTEXT           | varchar(255) | No  | No  |

Table 3-9, OperatorIntervention, contains information relative to requests that require a User Services' Operator to act upon.

**Table 3-9. OmOperatorIntervention**

| Name                   | Code                   | Type         | P   | M   |
|------------------------|------------------------|--------------|-----|-----|
| OperatorInterventionId | OPERATORINTERVENTIONID | identlarge   | Yes | Yes |
| RequestId              | REQUESTID              | varchar(10)  | No  | Yes |
| WorkedBy               | WORKEDBY               | varchar(14)  | No  | No  |
| CreationTime           | CREATIONTIME           | datetime     | No  | Yes |
| AckTime                | ACKTIME                | datetime     | No  | No  |
| CompletionTime         | COMPLETIONTIME         | datetime     | No  | No  |
| Outcome                | OUTCOME                | varchar(50)  | No  | No  |
| InterventionStatus     | INTERVENTIONSTATUS     | tinyint      | No  | Yes |
| OperatorNotes          | OPERATORNOTES          | varchar(255) | No  | No  |

Table 3-10, OmRequest, records each data distribution request received by an OMS Client.

**Table 3-10. OmRequest**

| Name               | Code               | Type        | P   | M   |
|--------------------|--------------------|-------------|-----|-----|
| RequestId          | REQUESTID          | varchar(10) | Yes | Yes |
| OrderId            | ORDERID            | varchar(10) | No  | Yes |
| UserId             | USERID             | varchar(14) | No  | Yes |
| MediaTypeId        | MEDIATYPEID        | tinyint     | No  | Yes |
| CreationDate       | CREATIONDATE       | datetime    | No  | Yes |
| ReSubmitCount      | RESUBMITCOUNT      | tinyint     | No  | Yes |
| ExemptFromLimitChk | EXEMPTFROMLIMITCHK | char(1)     | No  | Yes |

Table 3-11, OmRequestInterventions, contains request specific information requiring a User Services' Operator to act upon.

**Table 3-11. OmRequestInterventions**

| Name                   | Code                   | Type        | P   | M   |
|------------------------|------------------------|-------------|-----|-----|
| OperatorInterventionId | OPERATORINTERVENTIONID | numeric(9)  | YES | YES |
| RequestId              | REQUESTID              | varchar(10) | No  | Yes |
| RequestStatus          | REQUESTSTATUS          | tinyint     | No  | Yes |
| ExplanationCode        | EXPLANATIONCODE        | tinyint     | No  | Yes |

Table 3-12, OmRequestOptions, stores the optional distribution options per request.

**Table 3-12. OmRequestOptions**

| Name             | Code             | Type         | P   | M   |
|------------------|------------------|--------------|-----|-----|
| RequestOptionsId | REQUESTOPTIONSID | varchar(10)  | Yes | Yes |
| Notify           | NOTIFY           | varchar(255) | No  | No  |
| NotifyType       | NOTIFYTYPE       | char(4)      | No  | No  |
| UserString       | USERSTRING       | varchar(255) | No  | No  |
| Priority         | Priority         | varchar(15)  | No  | No  |

Table 3-13, OmQueue, maintains the current settings of the Queue utilized by Order Manager Server during Request Dispatching.

**Table 3-13. OmQueue**

| Name          | Code          | Type        | P   | M   |
|---------------|---------------|-------------|-----|-----|
| QueueName     | QUEUENAME     | varchar(10) | Yes | Yes |
| QSuspendState | QSUSPENDSTATE | char(1)     | No  | Yes |
| ActionClass   | ACTIONCLASS   | varchar(10) | No  | Yes |
| QueueDesc     | QUEUEDESC     | varchar(75) | No  | Yes |
| LastUpdate    | LASTUPDATE    | datetime    | No  | Yes |

Table 3-14 OmStatus, maintains the static values for the status of request, granules, bundling orders, operator interventions, notifications and actions.

**Table 3-14. OmStatus**

| Name       | Code       | Type        | P   | M   |
|------------|------------|-------------|-----|-----|
| StatusCode | STATUSCODE | tinyint     | Yes | Yes |
| StatusDesc | STATUS     | varchar(25) | No  | Yes |

Table 3-15, OmSubSettingInfo, records the subsetting information specific to Landsat granules referenced within a request.

**Table 3-15. OmSubSettingInfo**

| Name       | Code       | Type         | P   | M   |
|------------|------------|--------------|-----|-----|
| RequestId  | REQUESTID  | varchar(10)  | Yes | Yes |
| Gran_Id_No | GRAN_ID_NO | int          | Yes | Yes |
| LineNum    | LINENUM    | int          | No  | Yes |
| SubSetInfo | SUBSETINFO | varchar(255) | No  | Yes |

Table 3-16, EcDbDatabaseVersions, contains information about the current database version for Order Manager Database.

**Table 3-16. EcDbDatabaseVersions**

| Name                   | Code                  | Type        | P   | M   |
|------------------------|-----------------------|-------------|-----|-----|
| EcDbSchemaVersionId    | ECDBSCHEMaverseNId    | smallint    | Yes | Yes |
| EcDbComments           | ECDBCOMMENTS          | comments    | No  | No  |
| EcDbCurrentVersionFlag | ECDCURRENTVERSIONFLAG | flag        | No  | No  |
| EcDbDatabaseName       | ECDBDATABASENAME      | name        | No  | No  |
| EcDbDropDescription    | ECDBDROPDESCRIPTION   | description | No  | No  |
| EcDbDropInstallDate    | ECDBDROPINSTALLDATe   | datetime    | No  | No  |
| EcDbDropVersion        | ECDBDROPVERSION       | version     | No  | No  |
| EcDbSybaseServer       | ECDBSYBASESERVER      | server      | No  | No  |
| EcDbSybaseVersion      | ECDBSYBASEVERSION     | version     | No  | No  |
| EcDbUpdateProcess      | ECDBUPDATEPROCESS     | process     | No  | No  |

### 3.1.3 Column Specifications

Table 3-17 provides a brief definition of each of the columns within the Order Manager Subsystem database and their valid values are contained herein. "Valid Values" identify the permissible data content of the column where there is a finite set of acceptable values that can be defined. Other columns are simply formatted/free text or numeric.

**Table 3-17. Order Manager Database Column Specification (1 of 7)**

| COLUMN                | DESCRIPTION  | TYPE        | TABLE                                   | VALID VALUES   |
|-----------------------|--|-------------|---|--|
| AckTime               | Time the Operator chose to work on a PENDING intervention                                  | datetime    | OmOperatorIntervention                  |  |
| ActionClass           | Determines which queue the OM Server should utilize  | varchar(10) | OmQueue                                 | PDS, SDSRV, VALIDATE, EMAIL  |
| ActionPriority        | The priority of the action.  | tinyint     | OmActionQueue                           | 60 = LOW,<br>150 = NORMAL,<br>220 = HIGH<br>230 = VHIGH<br>255 = EXPRESS   |
| ActionQueueId         | Uniquely identified the action queue entry   | numeric(9)  | OmActionQueue                           |  |
| ActionStatus          | Current Status of an Action in the queue   | tinyint     | OmActionQueue                           | NULL,<br>90 = RETRY,<br>70 = DONE,<br>40 = FAILED.<br>10 = FAILED/RETRY    |
| ActionType            | Type of action.  | char(1)     | OmActionQueue                           | D,E or V   |
| BundlingOrderId       | Unique identifier for bundled order  | varchar(10) | OmBundlingOrder<br>OmRequestOptions     |  |
| BundlingOrderPriority | Distribution priority to be used for the actions generated for the specific bundling order | tinyint     | OmBundlingOrder                         | 60 = LOW,<br>150 = NORMAL,<br>220 = HIGH,<br>230 = VHIGH,<br>255 = EXPRESS |
| BundlingOrderStatus   | Current bundling status  | tinyint     | OmBundlingOrder                         | 140 = ACTIVE,<br>100 = CANCELLED<br>150 = EXPIRED                          |
| CharValue             | Holds the value of a particular configuration parameter which has a type of "C"            | char(50)    | OmConfigParameter                       |  |
| CompletionTime        | Time the Operator Intervention or Action was completed                                     | datetime    | OmOperatorIntervention<br>OmActionQueue |  |

**Table 3-17. Order Manager Database Column Specification (2 of 7)**

| COLUMN             | DESCRIPTION  | TYPE         | TABLE                             | VALID VALUES |
|--------------------|--|--------------|-----------------------------------|--------------|
| ConfigId           | Unique identifier for each configuration parameter                   | tinyint      | OmConfigParameter                 | 0-255        |
| CreationTime       | Time the Intervention was inserted into the table                    | datetime     | OmOperatorIntervention, OmRequest |              |
| DispatchInfo       | Information regarding the dispatch disposition of an action          | varchar(100) | OmActionQueue                     |              |
| EnqueueTime        | date and time the action was inserted into the ActionQueue table     | datetime     | OmActionQueue                     |              |
| EsdtType           | ShortName and VersionId of the granule                               | varchar(12)  | OmGranule                         |              |
| ExemptFromLimitChk | Determines whether the request will undergo Request Limit Validation | char(1)      | OmRequest                         | "Y" or "N"   |
| ExpirationDate     | Date and time the Bundling Order will expire                         | datetime     | OmBundlingOrder                   |              |

**Table 3-17. Order Manager Database Column Specification (3 of 7)**

| COLUMN          | DESCRIPTION  | TYPE          | TABLE  | VALID VALUES  |
|-----------------|--|---------------|--|---|
| Explanation     | Detailed information regarding the reason for a specified state of either a request or a granule | varchar(50)   | OmExplanation                                  | "Maximum Granule Count Exceeded", "Media Capacity Exceeded", "Inaccessible due to DFA", "Invalid UR/Granule Not Found", "Inaccessible – Restricted Granule", "Max Retry Exceeded", "Granule has been logically deleted" "Max RequestSize Exceeded" "Granule exceeds media capacity" |
| ExplanationCode | Static value for the defined reasons for a granule or request to have a specific status          | tinyint       | OmExplanation<br>OmRequestOptions<br>OmGranule | 0-255   |
| FloatValue      | Real number value of Configuration Parameter whose type has been specified as "F"                | float         | OmConfigParameter                              |   |
| GranType        | Determines whether granule is a type of Science, Quality, ProcessingHistory or Browse            | char(2)       | OmGranule                                      | SC<br>PH<br>QA<br>BR  |
| GranuleId       | Geoid for Granule  | numeric(16,0) | OmGranule                                      |   |
| GranuleSize     | Size in MB of the Granule as it is stored in the SDSRV database                                  | float         | OmGranule                                      |   |
| Gran_Id_No      | Sequential number identifying a specific granule in a multi-granule request                      | int           | OmGranule<br>OmSubSettingInfo                  |   |

**Table 3-17. Order Manager Database Column Specification (4 of 7)**

| COLUMN             | DESCRIPTION  | TYPE        | TABLE   | VALID VALUES   |
|--------------------|--|-------------|---|--|
| GranStatus         | Status of a granule after it has undergone validation  | tinyint     | OmGranule   | NULL,<br>40 = FAILED ,<br>30 = HOLD,<br>20 = SKIPPED |
| InsertDateTime     | Date and time the granule was inserted into the OmGranule table  | datetime    | OmGranule   |  |
| InterventionStatus | Current state of an intervention.  | tinyint     | OmOperatorIntervention                                    | 50 = PENDING,<br>60 = IN-WORK,<br>70 = DONE          |
| IntValue           | integer value for a Configuration Parameter whose type has been specified as "I"                                     | int         | OmConfigParameter   |  |
| LastAccess         | Last time BundlingOrder was accessed   | datetime    | OmBundlingOrder   |  |
| LastUpdate         | Date and time the record was last modified   | datetime    | OmActionQueue<br>OmNotification<br>OmMediaType<br>OmState |  |
| LineNum            | Integer detailing line number within ODL for SubSetting Information  | int         | OmSubSettingInfo  |  |
| MaxBundleAge       | Integer value which determine the number of hours which a bundle can have requests incorporated before it is expired | float       | OmBundlingOrder,  |  |
| MaxRequestSize     | Largest size a request can be for a specified Media Type   | float       | OmMediaType   |  |
| MediaCapacity      | Size in MB of the specified media  | float       | OmMediaType   |  |
| MediaType          | Character description of the defined media types   | varchar(20) | OmMediaType   | FTPPULL<br>FTPPUSH<br>8MM<br>DLT<br>DVD<br>CDROM     |

**Table 3-17. Order Manager Database Column Specification (5 of 7)**

| COLUMN                 | DESCRIPTION  | TYPE         | TABLE   | VALID VALUES        |
|------------------------|--|--------------|---|---------------------|
| MediaTypeId            | Unique identifier for each media type  | tinyint      | OmMediaType<br>OmRequest<br>OmBundlingOrder                         | 0-255               |
| MinBundleGranCnt       | Minimum number of granules a bundle can contain before it is distributed   | int          | OmMediaType<br>OmBundlingOrder                                      |                     |
| MinBundleSize          | Minimum size in MB a bundle must attain before it is distributed.  | int          | OmMediaType<br>OmBundlingOrder                                      |                     |
| NotificationId         | Unique identifier for Notifications  | numeric(9)   | OmNotification  |                     |
| NotificationStatus     | Status of a Notification   | tinyint      | OmNotification  | NULL,<br>130 = SENT |
| Notify                 | Free text field to record the optional distribution parameter NOTIFY. Normally expected to hold an email address where the user would like the distribution request sent | varchar(255) | OmRequestOptions  |                     |
| NotifyType             | Text fields to record whether the notification to the user should be sent via EMAIL  | char(4)      | OmRequestOptions  | MAIL                |
| OperatorInterventionId | Unique identifier for an Operator Intervention Request   | int          | OmOperatorIntervention<br>OmNotification,<br>OmRequestInterventions |                     |
| OperatorNotes          | Free test field to permit an Operator to enter information regarding an Operator Intervention  | varchar(255) | OmOperatorIntervention  |                     |
| OperatorText           | Free text field to permit an Operator to enter information into an Email Notification request  | varchar(255) | OmNotification  |                     |
| OrderId                | OrderId corresponding to MSS EcAcOrder   | varchar(10)  | OmRequest   |                     |

**Table 3-17. Order Manager Database Column Specification (6 of 7)**

| COLUMN                | DESCRIPTION   |             | TABLE  | VALID VALUES                      |
|-----------------------|---|-------------|--|-----------------------------------|
| Outcome               | Information regarding the disposition of an intervention                      | varchar(50) | OmOperatorIntervention   |                                   |
| ParameterName         | Name of the Configuration Parameter   | varchar(50) | OmConfigParameter  |                                   |
| ParameterType         | Determines whether the parameter will hold integer, character or float values | char(!)     | OmConfigParameter  | "I" or "C" or "F"                 |
| ParameterDesc         | Details on the parameter.   | varchar(50) | OmConfigParameter  |                                   |
| PartitionGranuleLimit | Largest number of granules within a partition                                 | int         | OmMediaType  |                                   |
| PartitionSizeLimit    | Largest size of a partition for a specified Media Type                        | float       | OmMediaType  |                                   |
| Pid                   | Process Identification Number for a process spawned by the OM Server          | int         | OmActionQueue  |                                   |
| Priority              | Optional Distribution request priority  | varchar(15) | OmRequestOptions   | HIGH, NORMAL, LOW, VHIGH, EXPRESS |
| QueueDesc             | Description of the QueueName  | varchar(75) | OmQueue  |                                   |
| QSuspendState         | Determines whether actions can be submitted to a specified QueueName          | char(1)     | OmQueue<br>OmMediaType   | Y,N,S                             |
| QueueName             | Name of queue to which OM Server dispatches                                   | varchar(10) | OmQueue<br>OmMediaType   |                                   |
| RequestId             | Unique identifier for each request  | varchar(10) | OmRequest<br>OmRequestOptions<br>OmActionQueue<br>OmNotification<br>OmOperatorIntervention<br>OmRequestInterventions<br>OmGranule<br>OmSubSettingInfo<br>OmBundlingOrder |                                   |

**Table 3-17. Order Manager Database Column Specification (7 of 7)**

| COLUMN        | DESCRIPTION   | TYPE         | TABLE                  |   |
|---------------|---|--------------|------------------------|---|
| RequestStatus | Current state of a request that requires Operator Intervention  | tinyint      | OmRequestInterventions | NULL,<br>30 = HOLD,<br>40 = FAILED  |
| ReSubmitCount | Number of times a OMS Request has been re-submitted   | tinyint      | OmRequest              |   |
| RetryCount    | Number of time an action has been dispatched  | tinyint      | OmActionQueue          |   |
| StatusDesc    | Description of the state of the granule, request, notification, intervention, action, or bundling order | varchar(25)  | OmStatus               | FAILED/RETRY<br>SKIPPED<br>HOLD<br>FAILED<br>PENDING<br>IN-WORK<br>DONE<br>Queued<br>RETRY<br>CANCELLED<br>RESUBMIT<br>SENT<br>ACTIVE<br>EXPIRED<br>Partitioned |
| StatusCode    | Static integer value for the defined statuses   | tinyint      | OmStatus               | 0-255   |
| SubSetInfo    | Holds the subsetting info for a Landsat granule   | varchar(255) | OmSubSettingInfo       |   |
| UserId        | Identification of user submitting a request for distribution  | varchar(14)  | OmRequest              |   |
| UserString    | Optional Distribution option which identifies a request   | varchar(100) | OmRequestOptions       |   |
| WorkedBy      | Identification of the Operator who entered a disposition of an Operator Intervention request            | varchar(14)  | OmOperatorIntervention |   |

### 3.1.4 Column Domains

Domains specify the ranges of values allowed for a given table column. Sybase supports the definition of specific domains to further limit the format of data for a given column. Sybase domains are, in effect, user-defined data types. There are no domain specifications within Order Manager.

### 3.1.5 Column Default Values

Defaults are used to supply a value for a column when one is **Not** defined at row insert time. Defaults defined in Sybase for the Order Manager Subsystem database are described in Table 3-18.

**Table 3-18. Order Manager Database Column Defaults**

| Column Name                  | Default Value |
|------------------------------|---------------|
| OmQueue.QSuspend.State       | N             |
| OmRequest.ResubmitCount      | 0             |
| OmGranule.GranuleSize        | 0             |
| OmBundlingOrder.LastAccess   | getdate()     |
| OmMediaType.QSuspendState    |               |
| OmRequest.ExemptFromLimitChk | N             |

### 3.1.6 Referential Integrity Rules

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. There are no rules defined for the Order Manager.

### 3.1.7 Check Constraints

Check constraints are similiar to rules, in that they specified the valid domain values. However, check constraints are defined at the table level and as such only apply to the specified table. Table 3-19 identifies the check constraints utilized in Order Manager.

**Table 3-19. Order Manager Check Constraints**

| Check Constraint | Table/Column                    | Domain Values                              |
|------------------|---------------------------------|--|
| State_Chk        | OmQueue.QSuspendState           | Y,N,S                                      |
| Ptype            | OmConfigParameter.ParameterType | I,C,F                                      |
| TypeDomain       | OmMediaType.MediaType           | FTPPUSH,<br>FTPPULL,8MM, DLT,DVD,<br>CDROM |

### **3.1.8 Views**

Sybase allows the definition of views as a means of limiting an application or users access to data in a table or tables. Views create a logical table from columns found in one or more tables. Currently, there are no views defined for the Order Manager Subsystem database.

### **3.1.9 Declarative Integrity Constraints**

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks automatically without requiring programming. Sybase is ANSI-92 compliant, therefore, its constraints support "restrict-only" operations. This means that a row can not be deleted or updated if there are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations can not be performed if a declarative integrity constraint has been used. Declarative integrity constraints used in the Order Manager Subsystem database are found here. Referential integrity is also maintained through use of user-defined triggers and procedures.

#### **3.1.9.1 Dependencies on Table: OmMediaType**

| Referenced by   | Primary Key | Foreign Key | Constraint Name     |
|-----------------|-------------|-------------|---------------------|
| OmBundlingOrder | MediaTypeld | MediaTypeld | fk_ombunordmedtypid |
| OmRequest       | MediaTypeld | MediaTypeld | fk_omreqmedtypid    |

#### **3.1.9.2 Dependencies on Table: OmGranule**

| Referenced by    | Primary Key           | Foreign Key              | Constraint Name        |
|------------------|-----------------------|--------------------------|------------------------|
| OmSubSettingInfo | RequestId, Gran_Id_No | RequestId,Gran_Id_N<br>o | fk_subsetreqidgranidno |

#### **3.1.9.3 Dependencies on Table: OmRequestOptions**

| Referenced by | Primary Key      | Foreign Key | Constraint Name |
|---------------|------------------|-------------|-----------------|
| OmRequest     | RequestOptionsId | RequestId   | fk_omreqreqid   |

### 3.1.9.4 Dependencies on Table: OmNotification

| Referenced by | Primary Key    | Foreign Key    | Constraint Name    |
|---------------|----------------|----------------|--------------------|
| OmActionQueue | NotificationId | NotificationId | fk_omactquenotifid |

### 3.1.9.5 Dependencies on Table: OmExplanation

| Referenced by          | Primary Key     | Foreign Key     | Constraint Name      |
|------------------------|-----------------|-----------------|----------------------|
| OmRequestInterventions | ExplanationCode | ExplanationCode | fk_omreqintervexplan |
| OmGranule              | ExplanationCode | ExplanationCode | fk_omgranexplan      |

### 3.1.8.6 Dependencies on Table: OmOperatorIntervention

| Referenced by  | Primary Key            | Foreign Key            | Constraint Name    |
|----------------|------------------------|------------------------|--------------------|
| OmNotification | OperatorInterventionId | OperatorInterventionId | fk_omnotoperinterv |

### 3.1.9.7 Dependencies on Table: OmStatus

| Referenced by          | Primary Key | Foreign Key         | Constraint Name       |
|------------------------|-------------|---------------------|-----------------------|
| OmGranule              | StatusCode  | GranStatus          | fk_omgranstat         |
| OmOperatorIntervention | StatusCode  | InterventionStatus  | fk_omoperintervstatus |
| OmRequestInterventions | StatusCode  | RequestStatus       | fk_omreqintervstat    |
| OmNotification         | StatusCode  | NotificationStatus  | fk_omnotstat          |
| OmActionQueue          | StatusCode  | ActionStatus        | fk_omactquestat       |
| OmBundlingOrder        | StatusCode  | BundlingOrderStatus | fk_bunordstat         |

### 3.1.9.8 Dependencies on Table: OmQueue

| Referenced by | Primary Key | Foreign Key | Constraint Name |
|---------------|-------------|-------------|-----------------|
| OmMediaType   | QueueName   | QueueName   | fk_ommedqname   |

### 3.1.10 Triggers

Sybase supports the enforcement of business rules via the use of triggers. A trigger is a set of activities or checks that are performed automatically whenever a row is inserted, updated, or deleted from a given table. Sybase allows the definition of insert, update, and delete triggers at the table level. Table 3-20 defines the triggers used within the OMS database.

**Table 3-20. Order Manager Database Triggers**

| Table                  | Trigger      | User Defined | Description                                  |
|------------------------|--------------|--------------|--|
| OmGranule              | OmGranInsert | Yes          | Ensures RequestId exists in OmRequestOptions |
| OmOperatorIntervention | OmOIDelete   | Yes          | Cascades deletes to OmRequestInterventions   |

A trigger within the MSS database will be updated to automatically delete completed request from Order Manager when the MSS request is removed. Table 3-21 provides a summary list of MSS triggers.

**Table 3-21. Summary List of MSS Triggers**

| Table       | Trigger            | User Defined |  |
|-------------|--------------------|--------------|--|
| EcAcRequest | TrigDelEcAcRequest | Yes          | Deletes on EcAcRequest tables will cascade deletes into OMS OmRequest and associated tables. |

### 3.1.11 Order Manager Stored Procedures

Sybase also supports business rules via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business rules and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. A summary list of the stored procedures Order Manager will be utilizing are identified in Table 3-22.

**Table 3-22. List of Stored Procedures (1 of 3)**

| Procedure Name                | Tables Accessed  |
|-------------------------------|--|
| OmActionComplete              | OmActionQueue  |
| OmCancelBundle                | OmBundlingOrder  |
| OmCreateBundlingOrder         | EcAcOrder, EcAcRequest, OmBundlingOrder, OmRequestOptions  |
| OmCreateNonBundlingOrder      | EcAcOrder, EcAcRequest, OmRequestOptions, OmRequestOptions |
| OmCreateRequest               | OmRequestOptions, OmRequest, EcAcOrder, EcAcRequest        |
| OmExpireBundles               | EcAcOrder, EcAcRequest, OmBundlingOrder                    |
| OmFailGranule                 | OmGranule  |
| OmGetActionQueueList          | OmActionQueue  |
| OmGetActiveActions            | OmActionQueue  |
| OmGetAddressInfo              | EcAcAddress, EcAcRequest                                   |
| OmGetAllCfg                   | OmConfigParameter  |
| OmGetAllMedia                 | OmMediaType  |
| OmGetAllMediaConfig           | OmMediaType  |
| OmGetAllMediaStates           | OmMediaType  |
| OmGetAllQueues                | OmQueue, OmMediaType                                       |
| OmGetBundlInfo                | OmBundlingOrder  |
| OmGetBundleCriteria           | OmMediaType  |
| OmGetBundlingCriteria         | OmMediaType  |
| OmGetBundlingOrder            | OmBundlingOrder  |
| OmGetCfg                      | OmConfigParameter  |
| OmGetCompletedInterventions   | OmOperatorIntervention                                     |
| OmGetDistributionForRequestId | EcAcRequest  |
| OmGetDistributionRequests     | EcAcRequest  |
| OmGetECSOrder                 | EcAcOrder  |
| OmGetFtpPushInfo              | EcAcRequest  |
| OmGetGranInfo                 | DsMdGranules, OmGranule                                    |
| OmGetGranSubsetInfo           | OmSubSettingInfo   |
| OmGetGranules                 | OmGranule  |
| OmGetGranulesForRequestId     | OmGranule  |
| OmGetInterventionForRequestId | OmOperatorIntervention                                     |
| OmGetInterventionGranInfo     | OmGranule  |
| OmGetInterventionReqInfo      | OmRequestInterventions, OmOperatorIntervention             |
| OmGetNotification             | OmNotification   |
| OmGetOpenInterventions        | OmOperatorIntervention                                     |
| OmGetPartitionInfo            | EcAcRequest  |
| OmGetQueueState               | OmQueue  |

**Table 3-22. List of Stored Procedures (2 of 3)**

| Procedure Name                 | Tables Accessed                                    |
|--------------------------------|--|
| OmGetRequestInfo               | OmRequest  |
| OmGetRequestMediaInfo          | OmRequest, EcAcRequest                             |
| OmGetRequestStatus             | OmRequest  |
| OmGetServerStatistics          | OmConfigParameter                                  |
| Om GetUserProfile              | MsAcUsrProfile, EcAcOrder                          |
| OmGetWorkedBy                  | OmOperatorIntervention                             |
| OmInsertAction                 | OmActionQueue                                      |
| OmInsertBundleRequest          | OmGranule, EcAcRequest                             |
| OmInsertGranule                | OmGranule  |
| OmInsertIntervention           | OmOperatorIntervention                             |
| OmInsertNotification           | OmNotification                                     |
| OmInsertReqIntervention        | OmRequestInterventions                             |
| OmInsertSubSetInfo             | OmSubSettingInfo                                   |
| OmListBundOrderByEDate         | OmBundlingOrder                                    |
| OmListBundOrderByMedia         | OmBundlingOrder                                    |
| OmListBundOrderByOrd           | OmBundlingOrder                                    |
| OmListBundOrderBySDate         | OmBundlingOrder                                    |
| OmListBundOrderByStatus        | OmBundlingOrder                                    |
| OmListBundOrderByUser          | OmBundlingOrder                                    |
| OmMaxCompletionCriteriaValues  | OmMediaType, OmBundlingOrder                       |
| OmMediaFilter                  | OmMediaType  |
| OmOptionalAddress              | EcAcAddress  |
| OmPartitionRequest             | EcAcRequest  |
| OmProcessRequestDisposition    | OmOperatorIntervention                             |
| OmResubmitRequest              | EcAcRequest, OmOperatorIntervention                |
| OmRetryAction                  | OmActionQueue                                      |
| OmRemoveCompletedActions       | OmActionQueue, OmNotification                      |
| OmRemoveCompletedInterventions | OmOpertorIntervention, OmGranule, OmRequestOptions |
| OmRemoveRequest                | OmRequest, OmRequestOptions, OmGranule             |
| OmResubmitRequest              | OmOperatorIntervention, EcAcRequest                |
| OmRetryAction                  | OmActionQueue                                      |
| OmSet_OI_Done                  | OmOperatorIntervention                             |
| OmSetQueueState                | OmQueue  |
| OmStatusFilter                 | OmStatus   |
| OmUpdBundleCriteria            | OmMediaType, OmBundlingOrder                       |
| OmUpdBundleMedSize             | OmMediaType  |
| OmUpdCfg                       | OmConfigParameter                                  |
| OmUpdMediaConfig               | OmMediaType  |

**Table 3-22. List of Stored Procedures (3 of 3)**

| Procedure Name             | Tables Accessed                   |
|----------------------------|-----------------------------------|
| OmUpdateActionStatus       | OmActionQueue                     |
| OmUpdateBundlingOrder      | OmBundlingOrder                   |
| OmUpdateCurrentWorker      | OmOperatorIntervention            |
| OmUpdateFtpPushInfo        | EcAcRequest                       |
| OmUpdateGranStatus         | OmGranule                         |
| OmUpdateGranuleId          | OmGranule                         |
| OmUpdateOI_Annotation      | OmOperatorIntervention            |
| OmUpdateOmRequest          | OmRequest                         |
| OmUpdatePartitionedGranule | OmGranule                         |
| OmUserFilter               | EcAcOrder                         |
| OmValidateGranules         | OmGranule, DsMdGranules           |
| OmValidateReqLimits        | OmMediaType,<br>OmConfigParameter |
| OmValidateUser             | MsAcUsrProfile                    |
| OmValidateRequest          | OmActionQueue, OmGranule          |

### 3.1.12 MSS New Stored Procedures

The implementation of Order Manager involves accessing the MSS database to generate new orders and requests. New stored procedures that will be stored within the MSS database to accomplish these functions are identified in Table 3-23.

**Table 3-23. MSS Stored Procedures**

| Procedure Name        | Tables Accessed           |
|-----------------------|---------------------------|
| ProcCreateNewOrder    | EcAcOrder, MsAcUsrProfile |
| ProcCreateNewRequest  | EcAcRequest               |
| ProcInsEcAcRequest    | EcAcRequest               |
| ProcUpdateShipAddress | EcAcRequest               |

### 3.1.13 SDSRV Stored Procedure Modification

The Order Manager application will be accessing the Science Data Server (SDSRV) database to validate granules within requests to determine their accessibility. Modified stored procedures within SDSRV to accomplish this function are identified in Table 3-24.

**Table 3-24. SDSRV Stored Procedures**

| Procedure Name         | Tables Accessed |
|------------------------|-----------------|
| ProcGetAccessPrivilege | DsMdGranules    |

## **3.2 Flat File Usage**

A flat file is an operating system file that is written and subsequently read serially, generally independent of other files that exist, and usually static in nature. There are cases when the implementation of persistent data is better suited to a flat file than to a database (e.g., system configuration data, external interface data). There are No flat files used by the Order Manager Subsystems. Configuration information is stored in the Order Manager database. Additional configuration information may be found in the configuration registry.

### **3.2.1 File Descriptions**

Not Applicable

### **3.2.2 Field Specifications**

Not Applicable

### **3.2.3 Domain Definitions**

Not Applicable

## 4. Spatial Subscription Server

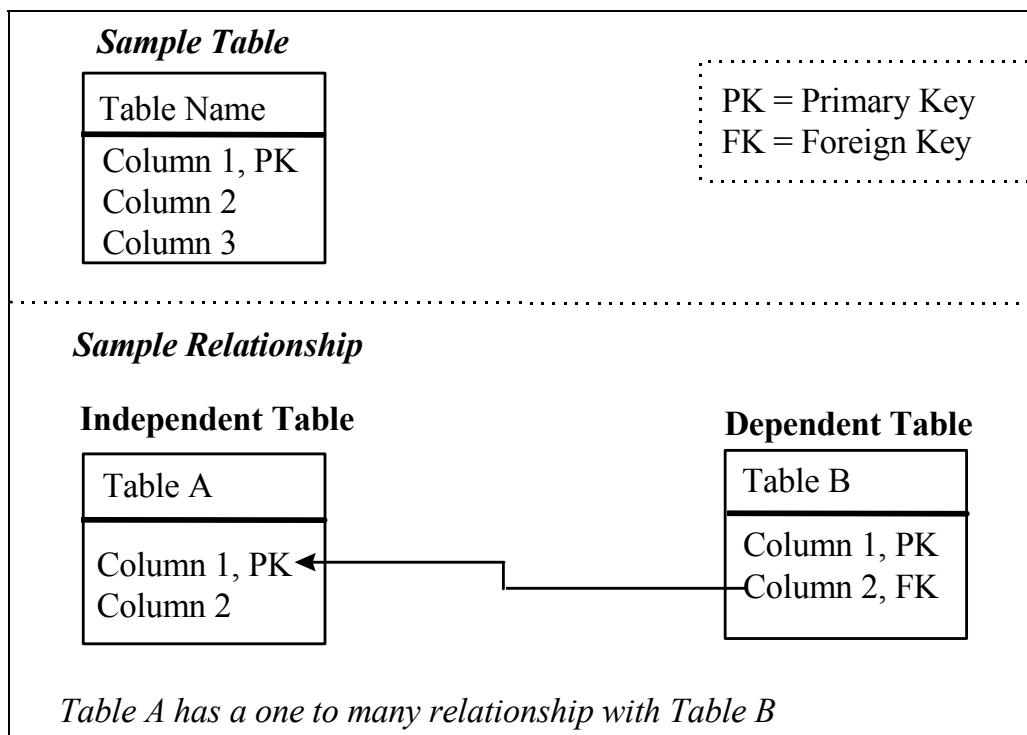
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### 4.1 Database Overview

The Spatial Subscription Server (SSS) database implements the persistent data requirements for the SSS subsystem. The database is designed in such a manner as to satisfy business policy while maintaining data integrity and consistency. Database tables are implemented using the Sybase Relational Database Management system (RDBMS). All components of the SSS database are described in the sections which follow.

#### 4.1.1 Physical Data Model Entity Relationship Diagram

The Entity Relationship Diagram (ERD) presents a schematic depiction of the SSS physical data model. The ERDs presented here for the SSS database were produced using the Power Designer Data Architect Computer Aided Software Engineering (CASE) tool. ERDs represent the relationship between entities or database tables. The key for the symbols used in the ERDs is identified in Figure 4-1. The ERD for the SSS database are shown in Appendix C.



**Figure 4-1. Spatial Subscription Server ERD Key**

## 4.1.2 Tables

A brief definition of each of tables in the SSS database is provided in this section

Table 4-1 identifies the actions that are associated with a subscription. A non-bundled subscription may have up to three actions (acquire, email, data pool), and each action would be represented by a row in this table.

**Table 4-1. EcNbActionDefinition**

| Name           | Type     | PK  | Mandatory | Description  |
|----------------|----------|-----|-----------|--|
| actionId       | int      | Yes | Yes       | A numerical identifier for a particular action   |
| subscriptionId | Int      | No  | Yes       | The identifier of the subscription associated with this action.  |
| actionType     | char(10) | No  | No        | The type of action: Notify, Acquire, DataPool  |
| Act_qPriority  | int      | No  | No        | The priority associated with the action at subscription entry time. (For the initial release this value will always be 1.) |

Table 4-2 represents the queue of matched subscriptions to be processed by the action driver.

**Table 4-2. EcNbActionQueue**

| Name           | Type         | PK  | Mandatory | Description   |
|----------------|--------------|-----|-----------|---|
| qPriority      | int          | Yes | Yes       | The priority associated with the action.  |
| ActionId       | int          | Yes | Yes       | Original action queue identifier for actions that have been requeued; same as the current ID if action has not been requeued. |
| actionQueueId  | int          | No  | Yes       | Current identifier for the queue.   |
| Act_qPriority  | int          | No  | No        | The event priority as it appears in the action queue. (For the initial release, this will always be 1.)                       |
| eventId        | int          | No  | No        | The identifier for the event associated with the subscription.  |
| subscriptionId | int          | No  | Yes       | The identifier for the subscription associated with the action.   |
| granUR         | varchar(255) | No  | No        | The UR for the granule associated with the event.   |

Table 4-3 keeps track of the next subscription action to be dequeued from the EcNbActionQueue.

**Table 4-3. EcNbActionQueueFront**

| Name         | Type | PK  | Mandatory | Description  |
|--------------|------|-----|-----------|--|
| qPriority    | int  | Yes | Yes       | The priority associated with the action. (For the initial release, this will always have value 1.) |
| qFrontId     | int  | No  | No        | A pointer to the front of the queue.   |
| qLogicalLock | int  | No  | No        | Not used, except to hold a lock on the table during a transaction.                                 |

Table 4-4 contains audit trail data for actions that have been processed.

**Table 4-4. EcNbActionQueueLog**

| Name         | Type        | PK  | Mandatory | Description  |
|--------------|-------------|-----|-----------|--|
| qPriority    | int         | Yes | Yes       | The priority associated with the action.   |
| ActionId     | int         | Yes | Yes       | Matches EcNbActionQueue.ActionId   |
| actionId     | int         | Yes | Yes       | Matches EcNbActionQueue.actionId   |
| actionStatus | varchar(30) | Yes | Yes       | The current state of the action. The valid values are:<br>Action Enqueue<br>Action Dequeue<br>Acquire<br>Action Notification<br>Finished Action Processing |
| actionDate   | datetime    | No  | No        | A timestamp associated with the log entry.   |
| pid          | int         | No  | No        | The UNIX process ID of the action driver that dequeued this action.  |

Table 4-5 keeps track of the next available position in the EcNbActionQueue.

**Table 4-5. EcNbActionQueueRear**

| Name      | Type | PK  | Mandatory | Description                              |
|-----------|------|-----|-----------|--|
| qPriority | int  | Yes | Yes       | The priority associated with the action. |
| qRearId   | int  | No  | No        | A pointer to the rear of the queue.      |

Table 4-6 keeps track of distribution requests for a particular granule and user. Its purpose is to ensure that the same granule is not distributed more than once to a particular user. It is written to by the action driver. A duplicate entry will result in a duplicate key error at runtime, which is handled by the action driver. The deletion driver performs cleanup.

**Table 4-6. EcNbDistribution**

| Name        | Type         | PK  | Mandatory | Description   |
|-------------|--------------|-----|-----------|---|
| eventId     | int          | Yes | Yes       | The ID of the event in the subscribed event queue.  |
| distrString | varchar(255) | Yes | Yes       | For a bundled subscription, this is the bundling order ID string. For a non-bundled subscription, this is the email address associated with the acquire action. |

Table 4-7 is a staging area for DataPool actions waiting to be inserted into the Data Pool action queue in the Data Pool database. An insert trigger on this table performs the actual insert into the Data Pool.

**Table 4-7. EcNbDpEventDetails**

| Name               | Type       | PK  | Mandatory | Description   |
|--------------------|------------|-----|-----------|---|
| actionId           | int        | Yes | Yes       | Action queue identifier   |
| subscriptionId     | int        | Yes | Yes       | Subscription ID associated with the action  |
| dbID               | int        | Yes | Yes       | Granule identifier in the SDSRV database  |
| eventDPactions     | int        | No  | no        | Total number of Data Pool actions associated with the event.  |
| ShortName          | varchar(8) | No  | No        | Short name of the associated ESDT   |
| esdtVersion        | int        | No  | No        | Version ID of the associated ESDT   |
| retentionPriority  | int        | No  | No        | Retention priority in the Data Pool database (see documentation for the table DlInsertActionQueue in the Data Pool database).   |
| retentionPeriod    | int        | No  | No        | Retention period in the Data Pool database (see documentation for the table DlInsertActionQueue in the Data Pool database).   |
| insertMetadataOnly | Char(1)    | No  | No        | Insert metadata flag for the Data Pool database(Y or N) (see documentation for the table DlInsertActionQueue in the Data Pool database).                                  |
| themelD            | int        | No  | No        | This is the themelD from the Data Pool database in the case where the subscription's Data Pool action has an associated theme enabled for insert. This value can be NULL. |

Table 4-8 defines the subscribable events.

**Table 4-8. EcNbEventDefinition**

| Name      | Type        | PK  | Mandatory | Description  |
|-----------|-------------|-----|-----------|--|
| EventType | Varchar(80) | Yes | Yes       | The type of event. Valid values are :<br>INSERT<br>DELETE<br>UPDATEMETADATA  |
| ESDT_Id   | Varchar(8)  | Yes | Yes       | The short name of the ESDT associated with the event.  |
| VersionID | int         | Yes | Yes       | The version number of the ESDT associated with the event.  |
| eventID   | int         | No  | No        | The identifier associated with the event in the SDSRV database. A value of zero denotes a withdrawn event marked for deletion. |

Table 4-9 defines the event's metadata attributes.

**Table 4-9. EcNbEventMetadataAttrDef**

| Name                | Type         | PK  | Mandatory | Description  |
|---------------------|--------------|-----|-----------|--|
| attributeName       | Varchar(255) | Yes | Yes       | The name of the attribute.   |
| attributeType       | Varchar(50)  | Yes | Yes       | The type of attribute: int, float, datetime, varchar, llbox, gpolygon, or PathBlock. |
| sdsrvTableName      | Varchar(50)  | No  | Yes       | The table in the SDSRV database where the attribute value appears.                   |
| sdsrvColumnName     | Varchar(50)  | No  | Yes       | The column in this table where the attribute value appears.                          |
| sdsrvParameterName  | Varchar(40)  | No  | No        | A numeric string associated with the attribute definition in SDSRV.                  |
| parameterColumnName | Varchar(50)  | No  | No        | The column name associated with the attribute definition in SDSRV.                   |
| attributeFlag       | Char(1)      | No  | No        | An indicator of the attribute type: 'P' (PSA), 'M' (measured), or 'S' (spatial).     |

Table 4-10 stores the values of all date attributes of the granule associated with the event.

**Table 4-10. EcNbEventMetadataDate**

| Name                   | Type         | PK  | Mandatory | Description                                     |
|------------------------|--------------|-----|-----------|---|
| qPriority              | int          | Yes | Yes       | Priority associated with the event.             |
| eventId                | int          | Yes | Yes       | Identifier for the event                        |
| attributeName          | Varchar(255) | Yes | Yes       | The name of the attribute.                      |
| attributeType          | Varchar(50)  | Yes | Yes       | The type of attribute: datetime.                |
| EventMetadataValueDate | datetime     | No  | No        | The datetime value associated with the granule. |

Table 4-11 stores the values of all floating point attributes of the granule associated with the event.

**Table 4-11. *EcNbEventMetadataFloat***

| Name            | Type         | PK  | Mandatory | Description                         |
|-----------------|--------------|-----|-----------|-------------------------------------|
| qPriority       | int          | Yes | Yes       | Priority associated with the event. |
| eventId         | int          | Yes | Yes       | Identifier for the event            |
| attributeName   | Varchar(255) | Yes | Yes       | The name of the attribute           |
| attributeType   | Varchar(50)  | Yes | Yes       | The type of the attribute: float    |
| eventValueFloat | float        | No  | No        | Value of the attribute.             |

Table 4-12 stores the values of all string attributes of the granule associated with the event.

**Table 4-12. *EcNbEventMetadataString***

| Name          | Type         | PK  | Mandatory | Description                         |
|---------------|--------------|-----|-----------|-------------------------------------|
| qPriority     | int          | Yes | Yes       | Priority associated with the event. |
| eventId       | int          | Yes | Yes       | Identifier for the event            |
| attributeName | Varchar(255) | Yes | Yes       | The name of the attribute           |
| attributeType | Varchar(50)  | Yes | Yes       | The type of the attribute: varchar  |
| EventValue    | Varchar(255) | No  | No        | String value for the metadata       |

Table 4-13 stores the values of all integer attributes of the granule associated with the event.

**Table 4-13. *EcNbEventMetadataInteger***

| Name              | Type         | PK  | Mandatory | Description                         |
|-------------------|--------------|-----|-----------|-------------------------------------|
| qPriority         | int          | Yes | Yes       | Priority associated with the event. |
| eventId           | int          | Yes | Yes       | Identifier for the event            |
| attributeName     | Varchar(255) | Yes | Yes       | The name of the attribute           |
| attributeType     | Varchar(50)  | Yes | Yes       | The type of the attribute: int      |
| eventValueInteger | int          | No  | No        | Integer value of the attribute.     |

Table 4-14 contains the metadata for an event whose associated spatial type is orbit polygon.  
(NOSE = Nominal Orbit Spatial Extent)

**Table 4-14. EcNbEventMetadataNose**

| Name          | Type         | PK  | Mandatory | Description  |
|---------------|--------------|-----|-----------|--|
| attributeName | Varchar(255) | Yes | Yes       | The name of the attribute  |
| attributeType | Varchar(50)  | Yes | Yes       | The type of the attribute  |
| qPriority     | int          | Yes | Yes       | Priority associated with the event.<br>(For the initial release, this will always be 1.) |
| eventId       | int          | Yes | Yes       | Identifier for the event   |
| PathNo        | smallint     | Yes | Yes       | Path number associated with the orbit  |
| StartBlock    | smallint     | Yes | Yes       | Starting block number for the path   |
| EndBlock      | smallint     | No  | Yes       | Ending block number for the path   |
| platInstCode  | tinyint      | yes | Yes       | Platform instrument code   |

Table 4-15 contains the list of matching expressions that are true for an event. Used in subscription resolution.

**Table 4-15. EcNbEventTruth**

| Name                 | Type | PK  | Mandatory | Description  |
|----------------------|------|-----|-----------|--|
| qPriority            | int  | Yes | Yes       | Priority associated with the event.<br>(For the initial release this will always be 1) |
| eventId              | int  | Yes | Yes       | Identifier for the event   |
| matchingExpressionId | int  | No  | No        | Identifier of a subscription qualifier satisfied by the event.                         |

Table 4-16 contains the next matching ExpressionId to be created.

**Table 4-16. EcNbMatchingExpNextId**

| Name   | Type | PK | Mandatory | Description  |
|--------|------|----|-----------|--|
| nextId | int  | No | No        | Next available identifier for a matching expression. |

Table 4-17 contains a unique list of subscription qualifiers base class information. It is cross-referenced with the EcNbSubscription table through the EcNbSubMatchExp\_XREF table.

**Table 4-17. EcNbMatchingExpression**

| Name                 | Type         | PK  | Mandatory | Description   |
|----------------------|--------------|-----|-----------|---|
| matchingExpressionId | int          | Yes | Yes       | Identifier for the matching expression  |
| attributeName        | Varchar(255) | No  | Yes       | Attribute name for the matching expression  |
| attributeType        | Varchar(50)  | No  | Yes       | Attribute type for the matching expression  |
| negationFlag         | Char(1)      | No  | Yes       | Indicates whether match is by equality (value of ' ') or inequality (non-blank character). For the initial release, the value will always be '' (equality). |

Table 4-18 contains a list of qualifiers for subscriptions spatially qualified by orbit polygon data.

**Table 4-18. EcNbNoseMatchingExpression**

| Name                 | Type     | PK  | Mandatory | Description                            |
|----------------------|----------|-----|-----------|--|
| matchingExpressionId | int      | Yes | Yes       | Identifier for the matching expression |
| PathNo               | smallint | Yes | Yes       | Path number associated with the orbit  |
| StartBlock           | smallint | Yes | Yes       | Starting block number for the path     |
| EndBlock             | smallint | No  | Yes       | Ending block number for the path       |
| platInstCode         | tinyint  | Yes | Yes       | Platform instrument code               |

Table 4-19 contains the email address for recipients of subscription notifications. It also contains a flag to indicate what type of metadata should be included in the notification .

**Table 4-19. EcNbNotificationAction**

| Name                  | Type         | PK  | Mandatory | Description   |
|-----------------------|--------------|-----|-----------|---|
| actionId              | int          | Yes | Yes       | Identifier for the action   |
| notificationEmailAddr | Varchar(255) | No  | No        | Email address of recipient  |
| metadataFlag          | Char(1)      | No  | No        | A boolean indicating whether all metadata should be included in email or only include names and values for metadata attributes associated with the subscription qualifiers:<br>'Y' – means all metadata<br>'N' – means qualifying metadata only |
| emailUserString       | Varchar(255) | No  | No        | An optional string supplied by the user to be incorporated in email.  |

Table 4-20 contains the data for each data pool action.

**Table 4-20. EcNbDpAction**

| Name               | Type    | PK  | Mandatory | Description  |
|--------------------|---------|-----|-----------|--|
| actionId           | int     | Yes | Yes       | Identifier for the action  |
| retentionPeriod    | int     | No  | Yes       | Retention period in the Data Pool database (see documentation for Data Pool database)  |
| retentionPriority  | int     | No  | Yes       | Retention priority in the Data Pool database (see documentation for Data Pool database)  |
| insertMetadataOnly | Char(1) | No  | Yes       | A boolean indicating whether the Data Pool action is for inserting both the science and metadata files or only the metadata file for that granule in the Data Pool directories. Valid values are<br>'Y' – means metadata only<br>'N' – means both science and metadata |

Table 4-21 contains acquire data associated with a subscription.

**Table 4-21. EcNbOrderAction**

| Name                 | Type         | PK  | Mandatory | Description   |
|----------------------|--------------|-----|-----------|---|
| actionId             | int          | Yes | Yes       | Identifier for the action   |
| actionPriority       | Varchar(10)  | No  | Yes       | Priority associated with the action                                 |
| userProfile          | Varchar(30)  | No  | Yes       | User profile name (as it appears in the MSS accounting database)    |
| emailAddress         | Varchar(255) | No  | Yes       | Email address of the user for distribution notification             |
| mediaFormat          | Varchar(20)  | No  | Yes       | Format for the data to be acquired (e.g. FILEFORMAT)                |
| mediaType            | Varchar(20)  | No  | Yes       | Type of distribution to be performed (e.g. FtpPush or FtpPull)      |
| notifyType           | Varchar(20)  | No  | No        | Type of distribution notification (e.g. MAIL)                       |
| ftpUser              | Varchar(30)  | No  | No        | Name of user for an FtpPush distribution                            |
| ftpPassword          | Varchar(16)  | No  | No        | User's password for an FtpPush distribution                         |
| destinationNode      | Varchar(255) | No  | No        | Machine that is the target for an FtpPush distribution              |
| destinationDirectory | Varchar(255) | No  | No        | Directory where data is to be pushed                                |
| userstring           | Varchar(255) | No  | No        | An optional string defined by the user for secondary identification |

Table 4-22 is a list of valid event queue and action queue priorities. For the initial release, it will consist of a single row with value 1.

**Table 4-22. EcNbQueueInfo**

| Name      | Type | PK  | Mandatory | Description                         |
|-----------|------|-----|-----------|-------------------------------------|
| qPriority | int  | Yes | Yes       | A valid priority number for a queue |

Table 4-23 holds time lapse configuration parameters for use by the deletion driver and the recovery driver.

**Table 4-23. EcNbSbConfiguration**

| Name                  | Type        | PK | Mandatory | Description  |
|-----------------------|-------------|----|-----------|--|
| configurationParm     | Varchar(25) | No | Yes       | Name of the configuration parameter                                    |
| configurationValueInt | int         | No | Yes       | Value of the configuration parameter expressed as a number of seconds. |

Table 4-24 holds subscription qualification information for spatial attributes.

**Table 4-24. EcNbSpatialMatchingExpression**

| Name                 | Type  | PK  | Mandatory | Description                            |
|----------------------|-------|-----|-----------|--|
| matchingExpressionId | int   | Yes | Yes       | identifier for the matching expression |
| llat                 | float | No  | Yes       | south latitude for llbox               |
| llong                | float | No  | Yes       | west longitude for llbox               |
| ulat                 | float | No  | Yes       | north latitude for llbox               |
| ulong                | float | No  | Yes       | east longitude for llbox               |
| spatialConstraint    | llbox | No  | Yes       | The LLBOX value                        |

Table 4-25 keeps track of the next subscribed event to be dequeued from the EcNbSubscribedEventQueue.

**Table 4-25. EcNbSubEventQueueFront**

| Name         | Type | PK  | Mandatory | Description  |
|--------------|------|-----|-----------|--|
| qPriority    | int  | Yes | Yes       | The priority associated with the action.                           |
| qFrontId     | int  | No  | No        | A pointer to the front of the queue.                               |
| qLogicalLock | int  | No  | No        | Not used, except to hold a lock on the table during a transaction. |

Table 4-26 contains audit trail data for events being processed.

**Table 4-26. EcNbSubEventQueueLog**

| Name           | Type        | PK  | Mandatory | Description   |
|----------------|-------------|-----|-----------|---|
| qPriority      | int         | Yes | Yes       | Priority associated with the event                                |
| eventId        | Int         | Yes | Yes       | Identifier for the event  |
| eventStatus    | Varchar(30) | Yes | Yes       | Current state of processing for the event                         |
| subscriptionId | int         | Yes | Yes       | Identifier of a matching subscription for the event (if non-zero) |
| eventDateTime  | datetime    | No  | No        | Timestamp for the log entry                                       |
| pid            | int         | No  | No        | UNIX process ID of the event driver processing the event          |

Table 4-27 keeps track of the next available position in EcNbSubscribedEventQueue.

**Table 4-27. EcNbSubEventQueueRear**

| Name      | Type | PK  | Mandatory | Description                              |
|-----------|------|-----|-----------|--|
| qPriority | int  | Yes | Yes       | The priority associated with the action. |
| qRearId   | int  | No  | No        | A pointer to the rear of the queue.      |

Table 4-28 cross-references the subscription and matching expression tables.

**Table 4-28. EcNbSubMatchExp\_XREF**

| Name                 | Type | PK  | Mandatory | Description                            |
|----------------------|------|-----|-----------|--|
| subscriptionId       | int  | Yes | Yes       | Identifier for the subscription        |
| matchingExpressionId | int  | Yes | Yes       | Identifier for the matching expression |

Table 4-29 holds subscription qualifications for date attributes.

**Table 4-29. EcNbSubMatchingExpDate**

| Name                 | Type     | PK  | Mandatory | Description                        |
|----------------------|----------|-----|-----------|------------------------------------|
| matchingExpressionId | int      | Yes | Yes       | Identifier for matching expression |
| LowerBoundD          | datetime | No  | No        | Earliest date in the date range    |
| UpperBoundD          | datetime | No  | No        | Latest date in the date range      |

Table 4-30 holds subscription qualifications for floating point attributes.

**Table 4-30. EcNbSubMatchingExpFloat**

| Name                 | Type     | PK  | Mandatory | Description                            |
|----------------------|----------|-----|-----------|--|
| matchingExpressionId | int      | Yes | Yes       | Identifier for matching expression     |
| LowerBoundF          | datetime | No  | No        | Minimum float value for the expression |
| UpperBoundF          | datetime | No  | No        | Maximum float value for the expression |

Table 4-31 holds subscription qualifications for integer attributes.

**Table 4-31. EcNbSubMatchingExpInteger**

| Name                 | Type     | PK  | Mandatory | Description                              |
|----------------------|----------|-----|-----------|--|
| matchingExpressionId | int      | Yes | Yes       | Identifier for matching expression       |
| LowerBoundI          | datetime | No  | No        | Minimum integer value for the expression |
| UpperBoundI          | datetime | No  | No        | Maximum integer value for the expression |

Table 4-32 holds subscription qualifications for string attributes.

**Table 4-32. EcNbSubMatchingExpString**

| Name                 | Type     | PK  | Mandatory | Description                             |
|----------------------|----------|-----|-----------|---|
| matchingExpressionId | int      | Yes | Yes       | Identifier for matching expression      |
| LowerBoundS          | datetime | No  | No        | Minimum string value for the expression |
| UpperBoundS          | datetime | No  | No        | Maximum string value for the expression |

Table 4-33 represents the queue of incoming events that are possible matches to subscriptions.

**Table 4-33. EcNbSubscribedEventQueue**

| Name            | Type          | PK  | Mandatory | Description   |
|-----------------|---------------|-----|-----------|---|
| qPriority       | int           | Yes | Yes       | Priority associated with the event  |
| eventId         | int           | Yes | Yes       | Original queue position of the event; same as the eventQueueId if the event has never been requeued |
| eventQueueId    | int           | No  | Yes       | Event queue position  |
| EventType       | Varchar(80)   | No  | Yes       | Type of event: INSERT, DELETE, or UPDATEREMETADATA  |
| ESDT_Id         | Varchar(8)    | No  | Yes       | ESDT short name for the event   |
| VersionID       | int           | No  | Yes       | ESDT version number for the event   |
| dbID            | Numeric(16,0) | No  | No        | Identifier for the event's granule in the SDSRV database  |
| granUR          | Varchar(255)  | No  | No        | UR for the granule associated with the event  |
| enqueueDateTime | datetime      | No  | No        | Time that the event was put into the queue  |

Table 4-34 contains basic data about subscriptions that have been entered.

**Table 4-34. EcNbSubscription**

| Name              | Type        | PK  | Mandatory | Description  |
|-------------------|-------------|-----|-----------|--|
| subscriptionId    | int         | Yes | Yes       | Identifier for the subscription  |
| EventType         | Varchar(80) | No  | Yes       | Event type for the subscription  |
| ESDT_Id           | Varchar(8)  | No  | Yes       | ESDT short name for the subscription   |
| VersionID         | int         | No  | Yes       | ESDT version number for the subscription   |
| userId            | Varchar(14) | No  | Yes       | Name of the owner of the subscription  |
| NumMatchExps      | int         | No  | No        | Number of subscription qualifiers  |
| status            | Varchar(10) | No  | No        | Subscription status: Active or Inactive  |
| expirationDate    | datetime    | No  | No        | Date after which the subscription expires  |
| bundlingOrderId   | varchar(10) | No  | No        | If the subscription is bundled, the MSS order ID of the bundling order.                                  |
| oldExpirationDate | datetime    | No  | No        | The original expiration date, if the subscription was created non-bundled and then subsequently bundled. |
| themeName         | varchar(40) | No  | No        | The name of a Data Pool theme, if the subscription has a data pool action associated with a theme.       |

Table 4-35 contains the next subscriptionId to be created.

**Table 4-35. EcNbSubscriptionNextId**

| Name   | Type | PK | Mandatory | Description                                  |
|--------|------|----|-----------|--|
| nextId | int  | No | Yes       | Next available identifier for a subscription |

Table 4-36 contains the next available identifier for an action.

**Table 4-36. EcNbActionNextId**

| Name   | Type | PK | Mandatory | Description                              |
|--------|------|----|-----------|--|
| nextId | int  | No | Yes       | Next available identifier for an action. |

Table 4-37 contains references to event and action data that are ready for cleanup by the deletion driver.

**Table 4-37. EcNbDeleteRequestQueue**

| Name                | Type        | PK | Mandatory | Description  |
|---------------------|-------------|----|-----------|--|
| deleteRequestId     | Numeric(22) | No | Yes       | Identifier for an entry in this queue                              |
| qPriority           | int         | No | Yes       | Priority associated with deletable object                          |
| objectId            | int         | No | Yes       | Identifier for a deletable object                                  |
| objectType          | Char(1)     | No | No        | Indicates whether object is an event ('E') or a subscription ('S') |
| objectCompleteTime  | datetime    | No | Yes       | Datetime processing completed for the object                       |
| deleteRequestStatus | tinyint     | No | Yes       | Current state of deletion processing for the object                |

Table 4-38 provides data to support logical locking while dequeuing EcNbDeleteRequestQueue.

**Table 4-38. EcNbDeleteRequestQueueLock**

| Name  | Type | PK | Mandatory | Description            |
|-------|------|----|-----------|------------------------|
| LLock | int  | No | Yes       | Used for queue locking |

Table 4-39 provides information about current and past versions of this database.

**Table 4-39. EcDbDatabaseVersions**

| Name                   | Type         | PK  | Mandatory | Description  |
|------------------------|--------------|-----|-----------|--|
| EcDbSchemaVersionId    | smallint     | Yes | Yes       | The subsystem-specific identifier for this database schema version   |
| EcDbDropVersion        | char(64)     | Yes | Yes       | The official description of the ECS software drops for this database version level.                                      |
| EcDbDropDescription    | varchar(255) | No  | No        | The official name of the ECS software drops for this database version level.   |
| EcDbCurrentVersionFlag | char(1)      | No  | No        | Flag indicating if this row represents the current database version entry  |
| EcDbDatabaseName       | varchar(255) | No  | No        | The name of the database for which this database versions level is applied.  |
| EcDbDropInstallDate    | datetime     | No  | No        | The date and time that the database versions level was installed.  |
| EcDbSybaseVersion      | varchar(255) | No  | No        | The software release version of the Sybase SQL server in place when this database version level was initially installed. |
| EcDbSybaseServer       | varchar(255) | No  | No        | The name of the baseline Sybase SQL server controlling this database.  |
| EcDbComments           | varchar(255) | No  | No        | Notes or comments on the database version level.   |
| EcDbUpdateProcess      | varchar(255) | No  | No        | The installation method by which this database version level was installed.  |

#### 4.1.3 Rules

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. Multiple rules may be defined for a given column. Multiple rules are not always uniquely named. The Spatial Subscription Server database does not employ the use of rules.

#### 4.1.4 Defaults

Defaults are used to supply a value for a column when one is not defined at insert time. The Spatial Subscription Server contains two defaults. The column EcNbSubscription.status has the default value of ‘Active’ and the column EcNbActionQueue.Act\_qPriority has the default value of 1.

#### 4.1.5 Views

Sybase allows the definition of views as a means of limiting an application or users access to data in a table or tables. Views create a logical table from columns found in one or more tables. There are no views defined in the Spatial Subscription Server database.

#### **4.1.6 Integrity Constraints**

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks without automatically requiring programming constraints which support “restrict-only” operations. This means that a row can not be deleted or updated if their are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations can not be performed if a declarative constraint has been used. All declarative integrity constraints defined in the Spatial Subscription Server database are described in this section.

##### **4.1.6.1 Dependencies on Table: EcNbMatchingExpression**

| <b>Referenced by</b>          | <b>Primary Key</b>   | <b>Foreign Key</b>   |
|-------------------------------|----------------------|----------------------|
| EcNbSubMatchingExpFloat       | matchingExpressionId | matchingExpressionId |
| EcNbSubMatchingExpInteger     | matchingExpressionId | matchingExpressionId |
| EcNbSubMatchingExpString      | matchingExpressionId | matchingExpressionId |
| EcNbSubMatchingExpDate        | matchingExpressionId | matchingExpressionId |
| EcNbSpatialMatchingExpression | matchingExpressionId | matchingExpressionId |
| EcNbNoseMatchingExpression    | matchingExpressionId | matchingExpressionId |
| EcNbSubMatchExp_XREF          | matchingExpressionId | matchingExpressionId |

##### **4.1.6.2 Dependencies on Table: EcNbSubscription**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| EcNbSubMatchExp_XREF | subscriptionId     | subscriptionId     |
| EcNbActionDefinition | subscriptionId     | subscriptionId     |
| EcNbActionQueue      | subscriptionId     | subscriptionId     |

##### **4.1.6.3 Dependencies on Table: EcNbActionDefinition**

| <b>Referenced by</b>   | <b>Primary Key</b> | <b>Foreign Key</b> |
|------------------------|--------------------|--------------------|
| EcNbOrderAction        | actionId           | actionId           |
| EcNbNotificationAction | actionId           | actionId           |
| EcNbDpAction           | actionId           | actionId           |
| DIFactDayNight         | granuleId          | granuleId          |
| DIFactGroupESDT        | granuleId          | granuleId          |

#### **4.1.6.4 Dependencies on Table: EcNbActionQueue**

| Referenced by      | Primary Key           | Foreign Key           |
|--------------------|-----------------------|-----------------------|
| EcNbActionQueueLog | qPriority<br>ActionId | qPriority<br>ActionId |

#### **4.1.6.5 Dependencies on Table: EcNbQueueInfo**

| Referenced by            | Primary Key | Foreign Key |
|--------------------------|-------------|-------------|
| EcNbSubEventQueueRear    | qPriority   | qPriority   |
| EcNbSubEventQueueFront   | qPriority   | qPriority   |
| EcNbActionQueueRear      | qPriority   | qPriority   |
| EcNbActionQueueFront     | qPriority   | qPriority   |
| EcNbActionQueue          | qPriority   | qPriority   |
| EcNbSubscribedEventQueue | qPriority   | qPriority   |

#### **4.1.6.6 Dependencies on Table: EcNbSubscribedEventQueue**

| Referenced by            | Primary Key          | Foreign Key          |
|--------------------------|----------------------|----------------------|
| EcNbSubEventQueueLog     | qPriority<br>eventId | qPriority<br>eventId |
| EcNbEventMetadataDate    | qPriority<br>eventId | qPriority<br>eventId |
| EcNbEventMetadataFloat   | qPriority<br>eventId | qPriority<br>eventId |
| EcNbEventMetadataString  | qPriority<br>eventId | qPriority<br>eventId |
| EcNbEventMetadataInteger | qPriority<br>eventId | qPriority<br>eventId |
| EcNbEventMetadataNose    | qPriority<br>eventId | qPriority<br>eventId |

#### 4.1.6.7 Dependencies on Table: EcNbEventMetadataAttrDef

| Referenced by            | Primary Key                    | Foreign Key                    |
|--------------------------|--------------------------------|--------------------------------|
| EcNbEventMetadataDate    | attributeName<br>attributeType | attributeName<br>attributeType |
| EcNbEventMetadataFloat   | attributeName<br>attributeType | attributeName<br>attributeType |
| EcNbEventMetadataInteger | attributeName<br>attributeType | attributeName<br>attributeType |
| EcNbEventMetadataString  | attributeName<br>attributeType | attributeName<br>attributeType |
| EcNbEventMetadataNose    | attributeName<br>attributeType | attributeName<br>attributeType |

#### 4.1.7 Triggers

Sybase supports the enforcement of business policy via the use of triggers. A trigger is best defined as a set of activities or checks that should be performed automatically whenever a row is inserted, updated, or deleted from a given table. Sybase allows the definition of insert, update, and delete trigger per table. All triggers defined in the Spatial Subscription Server database are described in Table 4-40.

**Table 4-40. List of Triggers**

| Trigger Name               | Type             | Table/Description  |
|----------------------------|------------------|--|
| TrigInsUpdEcNbSubscription | insert or update | EcNbSubscription: validates bundlingOrderId and themeName if either is not null  |
| TrigInsEcNbDpEventDetails  | insert           | EcNbDpEventDetails: ensures that all data pool actions for an event are present in the table and then inserts them simultaneously into the data pool action queue. |

#### 4.1.8 Stored Procedures

Sybase also includes support for business policy via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business policy and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. A listing of each of the stored procedures in the

Spatial Subscription Server database is given in Table 4-41. A brief definition of each of these stored procedures follows.

**Table 4-41. List of Stored Procedures (1 of 7)**

| Name                            | Table Accessed   | Stored Procedure Called | Description  |
|---------------------------------|--|-------------------------|--|
| ProcActionDequeue               | EcNbActionQueueFront<br>EcNbActionQueueRear<br>EcNbActionQueue |                         | Dequeues from the action queue   |
| ProcActionEnqueue               | EcNbActionQueueRear<br>EcNbActionQueue<br>EcNbActionQueueLog   |                         | Enqueues into the action queue.  |
| ProcActionReEnqueue             | EcNbActionQueueRear<br>EcNbActionQueue<br>EcNbActionQueueLog   |                         | Re-enqueues the failed action  |
| ProcCleanupObsoleteESD T        | EcNbEventDefinition<br>EcNbEventDefinitionObsolete             |                         | Removes withdrawn event definitions marked for deletion, moving them to another table. |
| ProcDeleteProcessedEvent        | EcNbSubscribedEventQueue<br>EcNbSubEventQueueLog               |                         | Deletes information about an event   |
| ProcDeleteProcessedSubscription | EcNbActionQueue<br>EcNbActionQueueLog                          |                         | Deletes information about a matched subscription                                       |
| ProcDeleteReEnqueue             | EcNbDeleteRequestQueue   |                         | ReEnqueues a failed deletion request.  |
| ProcDeleteSubsByBO              | EcNbSubscription   | ProcDeleteSubscription  | Deletes all subscriptions associated with a given bundling order.                      |
| ProcDeleteSubsByTheme           | EcNbSubscription   | ProcDeleteSubscription  | Deletes all subscriptions associated with a given data pool theme.                     |

**Table 4-41. List of Stored Procedures (2 of 7)**

| Name                           | Table Accessed  | Stored Procedure Called | Description  |
|--------------------------------|---|-------------------------|--|
| ProcDeleteSubscription         | EcNbSubMatchEx<br>p_XREF<br>EcNbSubscription<br>EcNbSpatialMatchingExpression<br>EcNbNoseMatchingExpression<br>EcNbSubMatchingExpString<br>EcNbSubMatchingExpInteger<br>EcNbSubMatchingExpFloat<br>EcNbSubMatchingExpDate<br>EcNbMatchingExpression<br>EcNbOrderAction<br>EcNbNotificationAction<br>EcNbDpAction<br>EcNbActionDefinition<br>EcNbActionQueueLog<br>EcNbActionQueue<br>EcNbSubscription |                         | Deletes a subscription.  |
| ProcDequeueDeleteRequest       | EcNbDeleteRequestQueue  |                         | Dequeues from the list of deletables.  |
| ProcGetActionFilter            | EcNbActionQueue<br>EcNbActionQueueLog<br>EcNbActionDefinition<br>EcNbSubscription   |                         | Returns a subset of actions in the action queue based on filtering criteria. |
| ProcGetBOforSub                | EcNbSubscription  |                         | Gets the bundling order associated with a subscription                       |
| ProcGetDistributionInformation | EcNbSubscription<br>EcNbActionDefinition<br>EcNbOrderAction   |                         | Gets acquire information associated with a subscription                      |

**Table 4-41. List of Stored Procedures (3 of 7)**

| Name                          | Table Accessed  | Stored Procedure Called | Description   |
|-------------------------------|---|-------------------------|---|
| ProcGetMatchingSubscriptions  | EcNbSubscription<br>EcNbSubMatchExp_XREF<br>EcNbEventTruth        |                         | Identify matching subscriptions for an event  |
| ProcGetNextActionId           | EcNbActionNextId  |                         | Gets the next position in the action queue  |
| ProcGetNextMatchExpld         | EcNbMatchingExp_NextId  |                         | Gets the next position for matching expression  |
| ProcGetNextSubId              | EcNbSubscription_NextId   |                         | Gets the next id for the subscription   |
| ProcGetSubFilter              | EcNbSubscription  |                         |   |
| ProcGetSubsForBundlingOrder   | EcNbSubscription  |                         | Gets the subscriptions associated with a particular bundling order.   |
| ProcGetSubsForTheme           | EcNbSubscription  |                         | Gets the subscriptions associated with a particular data pool theme.  |
| ProcGetThemeForSub            | EcNbSubscription  |                         | Gets the theme associated with a subscription.  |
| Proc GetUserForSub            | EcNbSubscription  |                         | Gets the user associated with a subscription.   |
| ProcInsEcNbDeleteRequestQueue | EcNbDeleteRequestQueue  |                         | Inserts a row into the EcNbDeleteRequestQueue   |
| ProcInsEcNbEventMetadataNose  | EcNbEventMetadataNose   |                         | Inserts a row into the EcNbEventMetadataNose  |
| ProcInsEcNbEventTruth         | EcNbEventTruth  |                         | Insert a row into the EcNbEventTruth  |
| ProcInsEcNbSubEventQueueLog   | EcNbSubEventQueueLog  |                         | Insert a row into the EcNbSubEventQueueLog  |
| ProcInsertDateMetadata        | EcNbEventMetadataDate<br>EcNbSubscribedEventQueue<br>DsMdGranules |                         | Saves metadata about dates in the NBSRV database  |
| ProcInsertDistributionAction  | EcNbDistribution  |                         | Inserts a row into table EcNbDistribution. A duplicate key exception will be raised if the row already exists. The exception is handled by the action driver. |
| ProcInsertDpAction            | EcNbActionDefinition<br>EcNbDpAction                              |                         | Inserts a row into EcNbActionDefinition and EcNbDpAction  |

**Table 4-41. List of Stored Procedures (4 of 7)**

| Name                         | Table Accessed  | Stored Procedure Called | Description  |
|------------------------------|---|-------------------------|--|
| ProcInsertDpEventDetails     | EcNbDpEventDetails  |                         | Inserts a row into EcNbDpEventDetails                      |
| ProcInsertFloatMetadata      | EcNbEventMetadataFloat<br>DsMdGrFloatInfoContent  |                         | Saves metadata about float values in the NBSRV database    |
| ProcInsertIntegerMetadata    | EcNbEventMetadataInteger<br>EcNbSubscribedEventQueue<br>DsMdGrIntegerInfoContent<br>EcNbEventMetadataAttrDef<br>DsMdMeasuredParameter |                         | Saves metadata about integer values in the NBSRV database. |
| ProcInsertMEDate             | EcNbMatchingExpression<br>EcNbSubMatchingExpDate<br>EcNbSubMatchExpr_XREF   |                         | Saves date matching expr info in the NBSRV database        |
| ProcInsertMEFloat            | EcNbMatchingExpression<br>EcNbSubMatchingExpFloat<br>EcNbSubMatchExpr_XREF  |                         | Saves float matching expr info in the NBSRV database       |
| ProcInsertMEInteger          | EcNbMatchingExpression<br>EcNbSubMatchingExplInteger<br>EcNbSubMatchExpr_XREF   | ProcGetNextMatchExprId  | Saves matching expression info about int qualifiers        |
| ProcInsertMestring           | EcNbMatchingExpression<br>EcNbSubMatchingExpString<br>EcNbSubMatchExpr_XREF   |                         | Saves matching expression info about string qualifiers     |
| ProcInsertNotificationAction | EcNbActionDefinition<br>EcNbNotificationAction  |                         | Inserts information about email action                     |

**Table 4-41. List of Stored Procedures (5 of 7)**

| Name                     | Table Accessed   | Stored Procedure Called | Description   |
|--------------------------|--|-------------------------|---|
| ProcInsertOrderAction    | EcNbActionDefinition<br>EcNbOrderAction  |                         | Insert a row into EcNbActionDefinition and EcNbOrderAction for an action.         |
| ProcInsertStringMetadata | EcNbEventMetadataString<br>EcNbSubscribedEventQueue<br>DsMdGrIStringInfoContent<br>EcNbEventMetadataAttrDef<br>DsMdAdditionalAttributes  |                         | Saves metadata about string values in the NBSRV DB                                |
| ProcInsertSubscription   | EcNbSubscription   |                         | Insert a new subscription   |
| ProcInsertTruth          | EcNbEventTruth<br>EcNbSubMatchingExpDate<br>EcNbEventMetadataDate<br>EcNbMatchingExpression<br>EcNbSubscription<br>EcNbSubMatchExp_XREF<br>EcNbSubMatchingExpFloat<br>EcNbEventMetadataFloat<br>EcNbSubMatchingExpInteger<br>EcNbEventMetadataInteger<br>EcNbSubMatchingExpString<br>EcNbEventMetadataString |                         | Stores info about expressions that match metadata                                 |
| ProcResumeSubscription   | EcNbSubscription   |                         | Resume a particular subscription, i.e. change its status from Inactive to Active. |
| ProcResumeSubsByTheme    | EcNbSubscription   |                         | Resume all of the subscriptions associated with a particular data pool theme.     |

**Table 4-41. List of Stored Procedures (6 of 7)**

| Name                         | Table Accessed   | Stored Procedure Called | Description  |
|------------------------------|--|-------------------------|--|
| ProcSubscribedEventDequeue   | EcNbSubEventQueueFront<br>EcNbSubEventQueueRear<br>EcNbSubscribedEventQueue  |                         | Dequeues from the queue of newly arrived events                                    |
| ProcSubscribedEventEnqueue   | EcNbSubEventQueueRear<br>EcNbSubscribedEventQueue<br>EcNbSubEventQueueLog  |                         | Inserts new event into subscribed event queue                                      |
| ProcSubscribedEventReEnqueue | EcNbSubEventQueueLog<br>EcNbEventMetadataDate<br>EcNbEventMetadataFloat<br>EcNbEventMetadataNose<br>EcNbEventMetadataInteger<br>EcNbEventMetadataString<br>EcNbEventTruth<br>EcNbSubEventQueueRear<br>EcNbSubEventQueueLog |                         | Re-enqueues failed events into the event queue                                     |
| ProcSuspendSubscription      | EcNbSubscription   |                         | Suspend a particular subscription, i.e. change its status from Active to Inactive. |
| ProcSuspendSubsByTheme       | EcNbSubscription   |                         | Suspend all of the subscriptions associated with a particular data pool theme.     |
| ProcSynchronizeESDTs         | EcNbEventDefinition<br>DsDeEvent   |                         | Synchronizes ESDT info with the SDSRV database                                     |

**Table 4-41. List of Stored Procedures (7 of 7)**

| Name                   | Table Accessed   | Stored Procedure Called           | Description  |
|------------------------|------------------|-----------------------------------|--|
| ProcThemeHasSubs       | EcNbSubscription |                                   | Returns TRUE if there is at least one subscription associated with a particular theme; returns FALSE otherwise.                  |
| ProcUpdSubAddBundOrder | EcNbSubscription |                                   | Updates a subscription with bundling order information.  |
| ProcUpdSubAddTheme     | EcNbSubscription | DataPool.ProcMakeThemeRetroactive | Updates a subscription with theme information.   |
| ProcUpdSubRmBundOrder  | EcNbSubscription |                                   | Updates a subscription by removing its association with a bundling order.  |
| ProcUpdSubRmTheme      | EcNbSubscription |                                   | Updates a subscription by removing its association with a theme.   |
| ProcUpdSubUserId       | EcNbSubscription |                                   | Updates a subscription by changing its userId.   |
| ProcValidateDateTime   | none             |                                   | Used to validate a datetime string. If the string does not translate into a valid Sybase datetime value, an exception is raised. |

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## 5. Management Subsystem (MSS)

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### 5.1 Database Overview

Data requirements for MSS fall into five logical categories:

- Order information - orders and requests placed for ECS products
- Site information – information on the sites at which the database is housed
- User Data – registered user information, user audit data, and user registration requests
- Validation data – Domain definitions for codes used by MSS software
- Versioning information – database schema version data

The MSS database implements the large majority of the persistent data requirements for the MSS Accountability Management Service CSC. The database is designed in such a manner as to satisfy business policy while maintaining data integrity and consistency. Database tables are implemented using the Sybase Relational Database Management system (DBMS). All components of the MSS database are described in the sections, which follow, in sufficient detail to support maintenance needs.

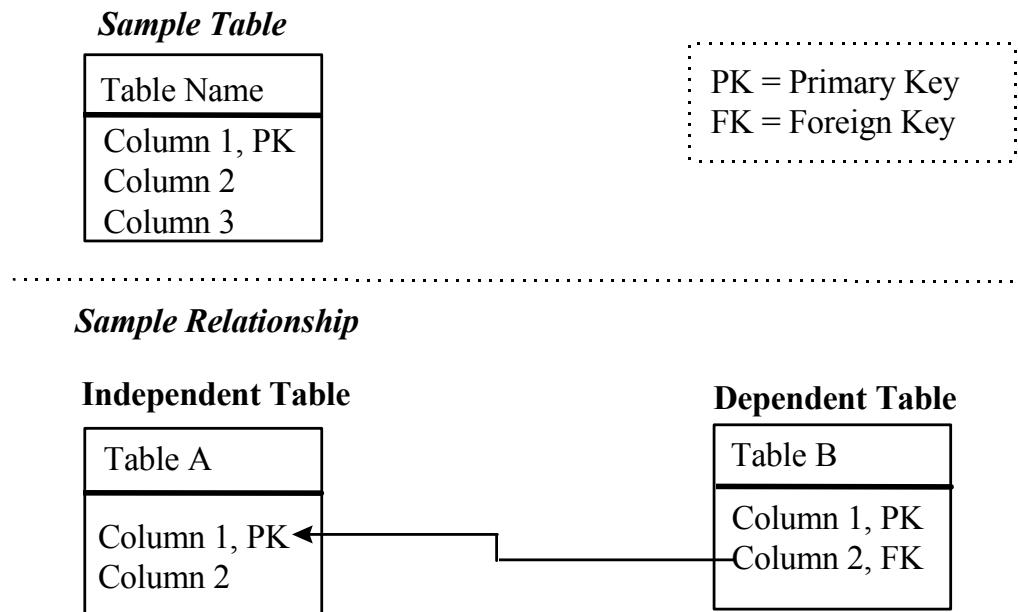
A summary of changes made to the MSS database in support of Order Manager for Synergy III follows.

1. Increased field width of EcAcRequest..ftpPassword from 16 to 50
2. Increased field width of EcAcRequest..destinationNode from 20 to 100
3. Changed locking scheme on EcAcRequest,EcAcOrder,MsUsrProfile to row locking
4. Added new table EcAcAddress (row level locking) used only by Order Manager in dispatching requests
5. Added new stored procedures used only by Order Manager and Order Manager Gui
  - ProcCreateNewOrder
  - ProcCreateNewRequest
  - ProcInsEcAcRequest (Gui)
  - ProcUpdateShipAddress(Gui)
6. Added new users to MSS database; EcOmOrderManager, EcOmGui
7. Added new requestStatus values
  - Partitioned
  - Queued

- Abort
  - Aborted
  - Active
  - Cancelled
  - Expired
8. Modified Procedures to increment OrderId and RequestId to cut down on deadlocks
  9. Modified trigger which deletes from EcAcRequest to propagate delete into OMS tables.

### 5.1.1 Physical Data Model Entity Relationship Diagram

The Entity Relationship Diagram (ERD) presents a schematic depiction of the MSS physical data model. The ERDs presented here for the MSS database were produced using the Power DesigNor Data Architect Computer Aided Software Engineering (CASE) tool. ERDs represent the relationship between entities or database tables. On ERDs, tables are represented by rectangles and relationships are represented as arrows (see Figure 5-1). The ERD for MSS is in Appendix D.



*Table A has a one to many relationship with Table B*

**Figure 5-1. Sample ERD**

## 5.1.2 Tables

A listing of each of the MSS tables, including a brief definition, is provided Table 5-1. Subsequent tables identify the columns comprising the table, as well as provide an indication of whether the column is part of the primary key (PK) for the table. The column list also indicates whether the column is a mandatory column that must be included in every row.

**Table 5-1. Data Table Listing**

| Table Name                  | Contents  | Logical Grouping       |
|-----------------------------|---|------------------------|
| EcAcAddress                 | Contact and Billing Address info per order                        | Order Information      |
| EcAcOrder                   | Order Information   | Order Information      |
| EcAcOrderId                 | Next available order ID   | Order Information      |
| EcAcRequest                 | Request Information   | Order Information      |
| EcAcRequestId               | Next available request ID   | Order Information      |
| EcDbDatabaseVersions        | The current schema version of the MSS database                    | Versioning Information |
| EcMsDAACSites               | Information on the DAAC site-housing project database information | Site Information       |
| MsAcAffiliationCode         | Affiliation Codes   | Validation Data        |
| MsAcAsterCategory           | Valid Aster categories  | Validation Data        |
| MsAcDAACCode                | Valid DAAC shortnames   | Validation Data        |
| MsAcInternetAffiliationCode | Internet affiliation codes  | Validation Data        |
| MsAcMediaFormatCode         | Valid media formats for an order                                  | Validation Data        |
| MsAcMediaTypeCode           | Valid media type codes  | Validation Data        |
| MsAcOpPrivilege             | Information that gives privilege to DAAC operators                | Site Information       |
| MsAcPriorityCode            | Valid order/request priority codes                                | Validation Data        |
| MsAcResearchFieldCode       | Valid research field codes  | Validation Data        |
| MsAcStatusCode              | Valid order/request status codes                                  | Validation Data        |
| MsAcUsrAudit                | Auditing information  | User Data              |
| MsAcUsrProfile              | User information  | User Data              |
| role_to_cots                | Role an operational user provides for a COTS package              | User Data              |

Table 5-2 stores the end-user's order information. The data is used to fill and ship the request and to track the status of the order. An order can have many requests, and it may not be associated with a user in the MsAcUsrProfile table. (i.e. the order may ‘belong’ to a guest user). Data is stored indefinitely in the table.

**Table 5-2. EcAcOrder**

| Name                  | Code                  | Type          | PK  | Mandatory |
|-----------------------|-----------------------|---------------|-----|-----------|
| abortedFlag           | abortedFlag           | char(1)       | No  | No        |
| cancelledFlag         | cancelledFlag         | char(1)       | No  | No        |
| darExpirationDateTime | darExpirationDateTime | datetime      | No  | No        |
| darId                 | darId                 | varchar(15)   | No  | No        |
| eMailAddr             | eMailAddr             | varchar(255)  | No  | No        |
| externalRequestId     | externalRequestId     | varchar(50)   | No  | No        |
| finishDateTime        | finishDateTime        | smalldatetime | No  | No        |
| firstName             | firstName             | varchar(20)   | No  | No        |
| homeDAAC              | homeDAAC              | varchar(3)    | No  | No        |
| lastName              | lastName              | varchar(20)   | No  | No        |
| middleInit            | middleInit            | char(1)       | No  | No        |
| orderDesc             | orderDesc             | varchar(50)   | No  | No        |
| orderDistFormat       | orderDistFormat       | varchar(64)   | No  | No        |
| orderGranule          | orderGranule          | numeric(9)    | No  | No        |
| orderHomeDAAC         | orderHomeDAAC         | varchar(3)    | Yes | Yes       |
| orderId               | orderId               | varchar(10)   | Yes | Yes       |
| orderMedia            | orderMedia            | varchar(20)   | No  | No        |
| orderPriority         | orderPriority         | varchar(10)   | No  | No        |
| orderSource           | orderSource           | varchar(21)   | No  | No        |
| orderStatus           | orderStatus           | varchar(30)   | No  | No        |
| orderType             | orderType             | varchar(2)    | No  | No        |
| receiveDateTime       | receiveDateTime       | smalldatetime | No  | No        |
| rpcId                 | rpcId                 | char(250)     | No  | No        |
| shipAddrCity          | shipAddrCity          | varchar(35)   | No  | No        |
| shipAddrCountry       | shipAddrCountry       | varchar(30)   | No  | No        |
| shipAddrFax           | shipAddrFax           | varchar(22)   | No  | No        |
| shipAddrPhone         | shipAddrPhone         | varchar(22)   | No  | No        |
| shipAddrState         | shipAddrState         | varchar(20)   | No  | No        |
| shipAddrStreet1       | shipAddrStreet1       | varchar(32)   | No  | No        |
| shipAddrStreet2       | shipAddrStreet2       | varchar(32)   | No  | No        |
| shipAddrStreet3       | shipAddrStreet3       | varchar(32)   | No  | No        |
| shipAddrZip           | shipAddrZip           | varchar(15)   | No  | No        |
| shipDateTime          | shipDateTime          | smalldatetime | No  | No        |
| standingOrderId       | standingOrderId       | varchar(10)   | No  | No        |
| startTime             | startTime             | smalldatetime | No  | No        |
| timeOfLastUpdate      | timeOfLastUpdate      | smalldatetime | No  | No        |
| title                 | title                 | varchar(5)    | No  | No        |
| userId                | userId                | varchar(14)   | No  | Yes       |

Table 5-3 is used to generate the next orderId for the DAAC identified in the ECMSDAACsites table. At any given time, there must be only one row in this table.

**Table 5-3. EcAcOrderId**

| Name    | Code    | Type        | PK | Mandatory |
|---------|---------|-------------|----|-----------|
| orderId | orderId | numeric(10) | No | No        |

Table 5-4 stores the shipping and tracking data for an end-user's request. A user can place one or many requests for a given order.

**Table 5-4. EcAcRequest (1 of 2)**

| Name                  | Code                  | Data Type     | PK  | Mandatory |
|-----------------------|-----------------------|---------------|-----|-----------|
| ESDT_Id               | ESDT_Id               | varchar(20)   | No  | No        |
| deleteRequestFlag     | deleteRequestFlag     | char(1)       | No  | Yes       |
| destinationDirectory  | destinationDirectory  | varchar(255)  | No  | No        |
| destinationNode       | destinationNode       | varchar(20)   | No  | No        |
| deviceDensity         | deviceDensity         | varchar(20)   | No  | No        |
| deviceId              | deviceId              | varchar(20)   | No  | No        |
| eMailAddr             | eMailAddr             | varchar(255)  | No  | No        |
| finishDateTime        | finishDateTime        | smalldatetime | No  | No        |
| firstName             | firstName             | varchar(20)   | No  | No        |
| ftpAddress            | ftpAddress            | varchar(128)  | No  | No        |
| ftpPassword           | ftpPassword           | varchar(16)   | No  | No        |
| lastName              | lastName              | varchar(20)   | No  | No        |
| mediaQuantity         | mediaQuantity         | numeric(3)    | No  | No        |
| mediaType             | mediaType             | varchar(20)   | No  | No        |
| middleInit            | middleInit            | char(1)       | No  | No        |
| numBytes              | numBytes              | float(8)      | No  | No        |
| numFiles              | numFiles              | numeric(9)    | No  | No        |
| numGranule            | numGranule            | numeric(9)    | No  | No        |
| orderHomeDAAC         | orderHomeDAAC         | varchar(3)    | No  | Yes       |
| orderId               | orderId               | varchar(10)   | No  | Yes       |
| parentId              | parentId              | varchar(10)   | No  | No        |
| receiveDateTime       | receiveDateTime       | smalldatetime | No  | No        |
| requestDesc           | requestDesc           | varchar(50)   | No  | No        |
| requestDistFormat     | requestDistFormat     | varchar(64)   | No  | No        |
| requestId             | requestId             | varchar(10)   | Yes | Yes       |
| requestPriority       | requestPriority       | varchar(10)   | No  | No        |
| requestProcessingDAAC | requestProcessingDAAC | varchar(3)    | Yes | Yes       |
| requestStatus         | requestStatus         | varchar(30)   | No  | No        |
| requestType           | requestType           | varchar(2)    | No  | No        |

**Table 5-4. EcAcRequest (2 of 2)**

| Name              | Code              | Data Type     | PK | Mandatory |
|-------------------|-------------------|---------------|----|-----------|
| shipAddrCity      | shipAddrCity      | varchar(35)   | No | No        |
| shipAddrCountry   | shipAddrCountry   | varchar(30)   | No | No        |
| shipAddrFax       | shipAddrFax       | varchar(22)   | No | No        |
| shipAddrPhone     | shipAddrPhone     | varchar(22)   | No | No        |
| shipAddrState     | shipAddrState     | varchar(20)   | No | No        |
| shipAddrStreet1   | shipAddrStreet1   | varchar(32)   | No | No        |
| shipAddrStreet2   | shipAddrStreet2   | varchar(32)   | No | No        |
| shipAddrStreet3   | shipAddrStreet3   | varchar(32)   | No | No        |
| shipAddrZip       | shipAddrZip       | varchar(15)   | No | No        |
| shipDateTime      | shipDateTime      | smalldatetime | No | No        |
| standingRequestId | standingRequestId | varchar(10)   | No | No        |
| startDateTime     | startDateTime     | smalldatetime | No | No        |
| tapeFormat        | tapeFormat        | varchar(20)   | No | No        |
| timeOfLastUpdate  | timeOfLastUpdate  | smalldatetime | No | No        |
| title             | title             | varchar(5)    | No | No        |

Table 5-5 is used to generate the next requestId for the DAAC identified in the EcMsDAACSITES table. At any given time, there must be only one row in this table.

**Table 5-5. EcAcRequestId**

| Name      | Code      | Type        | PK | Mandatory |
|-----------|-----------|-------------|----|-----------|
| requestId | requestId | numeric(10) | No | No        |

Table 5-6 identifies the current version level of the MSS database.

**Table 5-6. EcDbDatabaseVersions**

| Name                   | Code                   | Type         | PK  | Mandatory |
|------------------------|------------------------|--------------|-----|-----------|
| EcDbSchemaVersionId    | EcDbSchemaVersionID    | smallint     | Yes | Yes       |
| EcDbComments           | EcDbComments           | varchar(255) | No  | No        |
| EcDbCurrentVersionFlag | EcDbCurrentVersionFlag | char(1)      | No  | No        |
| EcDbDatabaseName       | EcDbDatabaseName       | varchar(255) | No  | No        |
| EcDbDropDescription    | EcDbDropDescription    | varchar(255) | No  | Yes       |
| EcDbDropInstallDate    | EcDbDropInstallDate    | datetime     | No  | No        |
| EcDbDropVersion        | EcDbDropVersion        | char(64)     | Yes | Yes       |
| EcDbSybaseServer       | EcDbSybaseServer       | varchar(255) | No  | No        |
| EcDbSybaseVersion      | EcDbSybaseVersion      | varchar(255) | No  | No        |
| EcDbUpdateProcess      | EcDbUpdateProcess      | varchar(255) | No  | No        |

Table 5-7 holds the database's DAAC ID, DAAC short, DAAC longname, Current DAAC Flag. This table **must** be the identifier of the DAAC at which the database is installed.

**Table 5-7. EcMsDAACSites**

| Name       | Code       | Type         | PK  | Mandatory |
|------------|------------|--------------|-----|-----------|
| DAAC_Id    | DAAC_Id    | char(2)      | Yes | Yes       |
| DAAC_Long  | DAAC_Long  | varchar(120) | No  | Yes       |
| DAAC_Short | DAAC_Short | char(3)      | Yes | Yes       |
| This_DAAC  | This_DAAC  | char(1)      | No  | Yes       |

Table 5-8 (not currently used) is a lookup table that defines the list of user affiliations.

**Table 5-8. MsAcAffiliationCode**

| Name            | Code            | Type         | PK  | Mandatory |
|-----------------|-----------------|--------------|-----|-----------|
| AffiliationCode | AffiliationCode | varchar(16)  | Yes | Yes       |
| AffiliationDesc | AffiliationDesc | varchar(255) | No  | No        |

Table 5-9 (not currently used) is a lookup table, it defines the list of Aster categories.

**Table 5-9. MsAcAsterCategory**

| Name            | Code            | Type        | PK  | Mandatory |
|-----------------|-----------------|-------------|-----|-----------|
| asterCategory   | asterCategory   | varchar(40) | No  | No        |
| asterCategoryId | asterCategoryId | numeric(2)  | Yes | Yes       |

Table 5-10 (not currently used) is a lookup table that lists all the DAACs abbreviations and names.

**Table 5-10. MsAcDAACCode**

| Name          | Code          | Type         | PK  | Mandatory |
|---------------|---------------|--------------|-----|-----------|
| DAACAbbrv     | DAACAbbrv     | varchar(3)   | Yes | Yes       |
| DAACLongName  | DAACLongName  | varchar(255) | No  | No        |
| DAACShortName | DAACShortName | varchar(10)  | No  | Yes       |

Table 5-11 (not currently used) is a lookup table that lists all the internet affiliations.

**Table 5-11. MsAcInternetAffiliationCode**

| Name                    | Code                    | Type         | PK  | Mandatory |
|-------------------------|-------------------------|--------------|-----|-----------|
| InternetAffiliationCode | InternetAffiliationCode | varchar(14)  | Yes | Yes       |
| InternetAffiliationDesc | InternetAffiliationDesc | varchar(255) | No  | No        |

Table 5-12 (not currently used) is a lookup table that lists all the available media format.

**Table 5-12. MsAcMediaFormatCode**

| Name            | Code            | Type         | PK  | Mandatory |
|-----------------|-----------------|--------------|-----|-----------|
| MediaFormatCode | MediaFormatCode | varchar(20)  | Yes | Yes       |
| MediaFormatDesc | MediaFormatDesc | varchar(255) | No  | No        |

Table 5-13 (not currently used) is a lookup table that lists all the media type available.

**Table 5-13. MsAcMediaTypeCode**

| Name          | Code          | Type         | PK  | Mandatory |
|---------------|---------------|--------------|-----|-----------|
| MediaTypeCode | MediaTypeCode | varchar(20)  | Yes | Yes       |
| MediaTypeDesc | MediaTypeDesc | varchar(255) | No  | No        |

Table 5-14 is a lookup table that defines the list of operator privileges.

**Table 5-14. MsAcOpPrivilege**

| Name     | Code     | Type          | PK  | Mandatory |
|----------|----------|---------------|-----|-----------|
| userId   | userId   | varchar( 12 ) | Yes | Yes       |
| homeDAAC | homeDAAC | varchar(3 )   | No  | Yes       |

Table 5-15 (not currently used) is a lookup table that defines the list of user request priority levels.

**Table 5-15. MsAcPriorityCode**

| Name         | Code         | Type         | PK  | Mandatory |
|--------------|--------------|--------------|-----|-----------|
| PriorityCode | PriorityCode | varchar(10)  | Yes | Yes       |
| PriorityDesc | PriorityDesc | varchar(255) | No  | No        |

Table 5-16 (not currently used) is a lookup table that defines the list of user research fields.

**Table 5-16. MsAcResearchFieldCode**

| Name              | Code              | Type         | PK  | Mandatory |
|-------------------|-------------------|--------------|-----|-----------|
| ResearchFieldCode | ResearchFieldCode | varchar(64)  | Yes | Yes       |
| ResearchFieldDesc | ResearchFieldDesc | varchar(255) | No  | No        |

Table 5-17 (not currently used) is a lookup table that defines the list order statuses.

**Table 5-17. MsAcStatusCode**

| Name       | Code       | Type         | PK  | Mandatory |
|------------|------------|--------------|-----|-----------|
| StatusCode | StatusCode | varchar(22)  | Yes | Yes       |
| StatusDesc | StatusDesc | varchar(255) | No  | No        |

Table 5-18 is a lookup table that defines the user audits.

**Table 5-18. MsAcUsrAudit**

| Name         | Code         | Type          | PK | Mandatory |
|--------------|--------------|---------------|----|-----------|
| DateTime     | datetime     | smalldatetime | No | No        |
| activityType | activityType | varchar(20)   | No | No        |
| hostName     | hostName     | varchar(30)   | No | Yes       |
| location     | location     | varchar(20)   | No | No        |
| program      | program      | varchar(50)   | No | No        |
| status       | status       | varchar(15)   | No | No        |
| userId       | userId       | varchar(12)   | No | Yes       |

Table 5-19 stores identifying, authenticating, and other data that is used by ECS servers to distribute data to registered users.

**Table 5-19. MsAcUsrProfile (1 of 3)**

| Name                  | Code                  | Type        | PK | Mandatory |
|-----------------------|-----------------------|-------------|----|-----------|
| ECSAuthenticator      | ECSAuthenticator      | varchar(32) | No | Yes       |
| GTWYUsrType           | GTWYUsrType           | varchar(20) | No | No        |
| accessPrivilege       | accessPrivilege       | varchar(8)  | No | No        |
| affiliation           | affiliation           | varchar(16) | No | No        |
| asterCategory         | asterCategory         | numeric(2)  | No | No        |
| billAddrCity          | billAddrCity          | varchar(35) | No | No        |
| billAddrCountry       | billAddrCountry       | varchar(30) | No | No        |
| billAddrFax           | billAddrFax           | varchar(22) | No | No        |
| billAddrPhone         | billAddrPhone         | varchar(22) | No | No        |
| billAddrState         | billAddrState         | varchar(20) | No | No        |
| billAddrStreet1       | billAddrStreet1       | varchar(32) | No | No        |
| billAddrStreet2       | billAddrStreet2       | varchar(32) | No | No        |
| billAddrStreet3       | billAddrStreet3       | varchar(32) | No | No        |
| billAddrZip           | billAddrZip           | varchar(15) | No | No        |
| billContactName_First | billContactName_First | varchar(20) | No | No        |
| billContactName_Last  | billContactName_Last  | varchar(20) | No | No        |

**Table 5-19. MsAcUsrProfile (2 of 3)**

| Name                  | Code                  | Type          | PK | Mandatory |
|-----------------------|-----------------------|---------------|----|-----------|
| billContactName_MI    | billContactName_MI    | char(1)       | No | No        |
| billContactOrg        | billContactOrg        | varchar(60)   | No | No        |
| billContactTitle      | billContactTitle      | varchar(5)    | No | No        |
| billEMailAddr         | billEMailAddr         | varchar(255)  | No | No        |
| category              | category              | varchar(7)    | No | No        |
| creationDate          | creationDate          | smalldatetime | No | No        |
| darExpeditedData      | darExpeditedData      | bit           | No | Yes       |
| eMailAddr             | eMailAddr             | varchar(255)  | No | No        |
| expirationDate        | expirationDate        | smalldatetime | No | No        |
| firstName             | firstName             | varchar(20)   | No | Yes       |
| homeDAAC              | homeDAAC              | varchar(3)    | No | Yes       |
| internetAffiliation   | internetAffiliation   | varchar(14)   | No | No        |
| lastName              | lastName              | varchar(20)   | No | Yes       |
| mailAddrCity          | mailAddrCity          | varchar(35)   | No | No        |
| mailAddrCountry       | mailAddrCountry       | varchar(30)   | No | No        |
| mailAddrFax           | mailAddrFax           | varchar(22)   | No | No        |
| mailAddrPhone         | mailAddrPhone         | varchar(22)   | No | No        |
| mailAddrState         | mailAddrState         | varchar(20)   | No | No        |
| mailAddrStreet1       | mailAddrStreet1       | varchar(32)   | No | No        |
| mailAddrStreet2       | mailAddrStreet2       | varchar(32)   | No | No        |
| mailAddrStreet3       | mailAddrStreet3       | varchar(32)   | No | No        |
| mailAddrZip           | mailAddrZip           | varchar(15)   | No | No        |
| middleInit            | middleInit            | char(1)       | No | No        |
| motherMaidenName      | motherMaidenName      | varchar(20)   | No | No        |
| nasaUser              | nasaUser              | char(1)       | NO | YES       |
| organization          | organization          | varchar(60)   | NO | NO        |
| privilegeLevel        | privilegeLevel        | varchar(10)   | NO | NO        |
| projectName           | projectName           | varchar(30)   | No | No        |
| researchField         | researchField         | varchar(64)   | No | No        |
| shipAddrCity          | shipAddrCity          | varchar(35)   | No | No        |
| shipAddrCountry       | shipAddrCountry       | varchar(30)   | No | No        |
| shipAddrFax           | shipAddrFax           | varchar(22)   | No | No        |
| shipAddrPhone         | shipAddrPhone         | varchar(22)   | No | No        |
| shipAddrState         | shipAddrState         | varchar(20)   | No | No        |
| shipAddrStreet1       | shipAddrStreet1       | varchar(32)   | No | No        |
| shipAddrStreet2       | shipAddrStreet2       | varchar(32)   | No | No        |
| shipAddrStreet3       | shipAddrStreet3       | varchar(32)   | No | No        |
| shipAddrZip           | shipAddrZip           | varchar(15)   | No | No        |
| shipContactName_First | shipContactName_First | varchar(20)   | No | No        |
| shipContactName_Last  | shipContactName_Last  | varchar(20)   | No | No        |

**Table 5-19. MsAcUsrProfile (3 of 3)**

| Name               | Code               | Type        | PK | Mandatory |
|--------------------|--------------------|-------------|----|-----------|
| shipContactName_MI | shipContactName_MI | char(1)     | No | No        |
| shipContactOrg     | shipContactOrg     | varchar(60) | No | No        |

Table 5-20 stores identifying address information per orderid.

**Table 5-20. EcAcAddress**

| Name                  | Code                  | Type         | PK  | Mandatory |
|-----------------------|-----------------------|--------------|-----|-----------|
| orderId               | ORDERID               | varchar(10)  | Yes | Yes       |
| title                 | TITLE                 | varchar(5)   | No  | No        |
| firstName             | FIRSTNAME             | varchar(20)  | No  | Yes       |
| middleInit            | MIDDLEINIT            | varchar(1)   | No  | No        |
| lastName              | LASTNAME              | varchar(20)  | No  | Yes       |
| organization          | ORGANIZATION          | varchar(60)  | No  | No        |
| eMailAddr             | eMailAddr             | varchar(255) | No  | No        |
| mailAddrCity          | mailAddrCity          | varchar(35)  | No  | No        |
| mailAddrCountry       | mailAddrCountry       | varchar(30)  | No  | No        |
| mailAddrFax           | mailAddrFax           | varchar(22)  | No  | No        |
| mailAddrPhone         | mailAddrPhone         | varchar(22)  | No  | No        |
| mailAddrState         | mailAddrState         | varchar(20)  | No  | No        |
| mailAddrStreet1       | mailAddrStreet1       | varchar(32)  | No  | No        |
| mailAddrStreet2       | mailAddrStreet2       | varchar(32)  | No  | No        |
| mailAddrStreet3       | mailAddrStreet3       | varchar(32)  | No  | No        |
| mailAddrZip           | mailAddrZip           | varchar(15)  | No  | No        |
| billAddrCountry       | billAddrCountry       | varchar(30)  | No  | No        |
| billAddrFax           | billAddrFax           | varchar(22)  | No  | No        |
| billAddrPhone         | billAddrPhone         | varchar(22)  | No  | No        |
| billAddrState         | billAddrState         | varchar(20)  | No  | No        |
| billAddrStreet1       | billAddrStreet1       | varchar(32)  | No  | No        |
| billAddrStreet2       | billAddrStreet2       | varchar(32)  | No  | No        |
| billAddrStreet3       | billAddrStreet3       | varchar(32)  | No  | No        |
| billAddrZip           | billAddrZip           | varchar(15)  | No  | No        |
| billContactName_First | billContactName_First | varchar(20)  | No  | No        |
| billContactName_Last  | billContactName_Last  | varchar(20)  | No  | No        |
| billContactName_MI    | billContactName_MI    | char(1)      | No  | No        |
| billContactOrg        | billContactOrg        | varchar(60)  | No  | No        |
| billContactTitle      | billContactTitle      | varchar(5)   | No  | No        |
| billEMailAddr         | billEMailAddr         | varchar(255) | No  | No        |

Table 5-21 defines operator's roles with accessible COTS.

**Table 5-21. role\_to\_cots**

| Name      | Code      | Type         | PK  | Mandatory |
|-----------|-----------|--------------|-----|-----------|
| cots_list | cots_list | varchar(255) | No  | No        |
| roleID    | roleID    | varchar(15)  | Yes | Yes       |

### 5.1.3 Columns

Brief definitions of each of the columns present in the database tables defined in the MSS tables in section 5.1.2 and their valid values are contained in Table 5-22. “Valid Values” identify the permissible data contents of the column where there is a finite set of acceptable values that can be defined. Other columns are simply formatted/free text or numeric.

**Table 5-22. MSS Database Column Specifications (1 of 14)**

| Column          | Description  | Data Type    | Table               | Valid Values   |
|-----------------|--|--------------|---------------------|--|
| abortedFlag     | This column indicates whether an order has been aborted.           | char(1)      | EcAcOrder           | Y = Yes<br>N = No  |
| accessPrivilege | The highest priority level a user can give his or her order.       | varchar(8)   | MsAcUsrProfile      |  |
| activityType    | The type of event that is taken place.                             | varchar(20)  | MsAcUsrAudit        |  |
| affiliation     | This column contains the user's affiliation.                       | varchar(16)  | MsAcUsrProfile      | Gov. Research<br>Government Other<br>Univ. Research<br>Univ. Class Work<br>Commercial<br>Kinder.-12<br>GradeNo |
| AffiliationCode | This is the user's affiliation code.                               | varchar(16)  | MsAcAffiliationCode |  |
| AffiliationDesc | This column contains the long description of the affiliation code. | varchar(255) | MsAcAffiliationCode |  |
| asterCategory   | This is the description of the aster category id.                  | varchar(40)  | MsAcAsterCategory   |  |
| asterCategory   | This column contains the user's aster category id.                 | numeric(2)   | MsAcUsrProfile      |  |
| asterCategoryId | This column defines an aster category identifier.                  | numeric(2)   | MsAcAsterCategory   |  |

**Table 5-22. MSS Database Column Specifications (2 of 14)**

| Column                | Description  | Data Type    | Table          | Valid Values  |
|-----------------------|--|--------------|----------------|---------------|
| billAddrCity          | This is the user's city, for billing purposes.   | varchar(35)  | MsAcUsrProfile |               |
| billAddrCountry       | This is the user's country, for billing purposes.  | varchar(30)  | MsAcUsrProfile |               |
| billAddrFax           | This is the user's fax number, for billing purposes.   | varchar(22)  | MsAcUsrProfile |               |
| billAddrPhone         | This is the user's phone number, for billing purposes.   | varchar(22)  | MsAcUsrProfile |               |
| billAddrState         | This is the user's state address, for billing purposes.  | varchar(20)  | MsAcUsrProfile |               |
| billAddrStreet1       | This is the user's street address, for billing purposes.   | varchar(32)  | MsAcUsrProfile |               |
| billAddrStreet2       | This is the user's street address, for billing purposes. Used only if address street is longer than what can be accommodated in billAddrStreet1. | varchar(32)  | MsAcUsrProfile |               |
| billAddrStreet3       | This is the user's street address, for billing purposes. Used only if address street is longer than what can be accommodated in billAddrStreet2. | varchar(32)  | MsAcUsrProfile |               |
| billAddrZip           | This is the user's zip code address, for billing purposes.   | varchar(15)  | MsAcUsrProfile |               |
| billContactName_First |  | varchar(20)  | MsAcUsrProfile |               |
| billContactName_Last  |  | varchar(20)  | MsAcUsrProfile |               |
| billContactName_MI    |  | char(1)      | MsAcUsrProfile |               |
| billContactOrg        |  | varchar(60)  | MsAcUsrProfile |               |
| billContactTitle      |  | varchar(5)   | MsAcUsrProfile |               |
| billEMailAddr         |  | varchar(255) | MsAcUsrProfile |               |
| cancelledFlag         | This is the ASTER privilege category ID.   | char(1)      | EcAcOrder      | Y=Yes<br>N>No |

**Table 5-22. MSS Database Column Specifications (3 of 14)**

| Column       | Description  | Data Type     | Table          | Valid Values   |
|--------------|--|---------------|----------------|--|
| category     | This is the date that the userid was created.                                      | varchar(7)    | MsAcUsrProfile |  |
| cots_list    | Identification for the DAAC.   | varchar(255)  | role_to_cots   |  |
| creationDate | This is the date that the userid was created.                                      | smalldatetime | MsAcUsrProfile |  |
| DAAC_Id      | Identification for the DAAC.   | char(2)       | EcMsDAACSites  |  |
| DAAC_Long    | This is the DAAC's long name.  | varchar(120)  | EcMsDAACSites  | Alaska SAR Facility<br>Consortium for International Earth Science Information Network<br>EROS Data Center<br>Goddard Space Flight Center<br>Jet Propulsion Laboratory<br>Langley Research Center<br>National Snow and Ice Data Center<br>Oak Ridge National Laboratory |
| DAAC_Short   | This is the short name abbreviation of the DAAC's.                                 | char(3)       | EcMsDAACSites  | ASF<br>CSN<br>EDC<br>GSF<br>JPL<br>LAR<br>NSC<br>ORN   |
| DAACAbbrv    | This is the 3-letters name abbreviation of the DAAC's (same values as daac_short). | varchar(3)    | MsAcDAACCode   | ASF<br>CSN<br>EDC<br>GSF<br>JPL<br>LAR<br>NSC<br>ORN<br>PVC  |

**Table 5-22. MSS Database Column Specifications (4 of 14)**

| Column                | Description   | Data Type     | Table           | Valid Values   |
|-----------------------|---|---------------|-----------------|--|
| DAACLongName          | This is the DAAC's long name.   | varchar(255)  | MsAcDAACCode    | Alaska SAR Facility<br>Consortium for International Earth Science Information Network<br>EROS Data Center<br>Goddard Space Flight Center<br>Jet Propulsion Laboratory<br>Langley Research Center<br>National Snow and Ice Data Center<br>Oak Ridge National Laboratory |
| DAACShortName         | This is the short name abbreviation of the DAAC's.  | varchar(10)   | MsAcDAACCode    | ASF<br>CSN<br>EDC<br>GSF<br>JPL<br>LAR<br>NSC<br>ORN<br>PVC  |
| darExpeditedData      | This column is false if the user is not allowed to submit DARs that request expedited data. The column is true if the user is allowed to submit DARs that request expedited data. | bit           | MsAcUserProfile | 0=False<br>1=True  |
| darExpirationDateTime | This column is the time the Data Acquisition Request Id will expire.  | datetime      | EcAcOrder       |  |
| darId                 | This column is the Data Acquisition Request Id for a particular Stranding Order.  | varchar(15)   | EcAcOrder       |  |
| DateTime              | The date that the activity has taken place.   | smalldatetime | MsAcUsrAudit    |  |

**Table 5-22. MSS Database Column Specifications (5 of 14)**

| Column                 | Description   | Data Type    | Table                | Valid Values      |
|------------------------|---|--------------|----------------------|-------------------|
| deleteRequestFlag      | Notes whether or not a request should be deleted.                                   | char(1)      | EcAcRequest          |                   |
| destinationDirectory   | This column holds the user's destination directory for ftp acquires.                | varchar(255) | EcAcRequest          |                   |
| destinationNode        | This column holds the user's destination node for ftp acquires.                     | varchar(100) | EcAcRequest          |                   |
| deviceDensity          | This column holds the request's device density.                                     | varchar(20)  | EcAcRequest          |                   |
| deviceID               | This column holds the requests' device ID.  | varchar(20)  | EcAcRequest          |                   |
| EcDbComments           | Notes or comments on the database version level.                                    | varchar(255) | EcDbDatabaseVersions |                   |
| EcDbCurrentVersionFlag | Flag indicating if this row represents the current database version entry.          | char(1)      | EcDbDatabaseVersions | 0 = no<br>1 = yes |
| EcDbDatabaseName       | The name of the database for which this database versions level is applied.         | varchar(255) | EcDbDatabaseVersions |                   |
| EcDbDropDescription    | The official name of the ECS software drops for this database version level.        | varchar(255) | EcDbDatabaseVersions |                   |
| EcDbDropInstallDate    | The date and time that the database versions level was installed.                   | datetime     | EcDbDatabaseVersions |                   |
| EcDbDropVersion        | The official description of the ECS software drops for this database version level. | char(64)     | EcDbDatabaseVersions |                   |
| EcDbSchemaVersionId    | The subsystem-specific identifier for this database schema version.                 | smallint     | EcDbDatabaseVersions |                   |
| EcDbSybaseServer       | The name of the baseline Sybase SQL server controlling this database.               | varchar(255) | EcDbDatabaseVersions | See 920-TDx-009   |

**Table 5-22. MSS Database Column Specifications (6 of 14)**

| Column            | Description  | Data Type     | Table                                      | Valid Values                                 |
|-------------------|--|---------------|--|--|
| EcDbSybaseVersion | The software release version of the Sybase SQL server in place when this database version level was initially installed. | varchar(255)  | EcDbDatabaseVersions                       |  |
| EcDbUpdateProcess | The installation method by which this database version level was installed.  | varchar(255)  | EcDbDatabaseVersions                       |  |
| ECSAuthenticator  | Authentication entry for the user used to authenticate access.   | varchar(32)   | MsAcUsrProfile                             |  |
| eMailAddr         | The user's email address.  | varchar(255)  | EcAcRequest<br>MsAcUsrProfile<br>EcAcOrder |  |
| ESDT_Id           | This name will identify the short name associated with the collection or granule.  | varchar(20)   | EcAcRequest                                | Refer to Document 910-TDA-019 ESDT Baseline. |
| expirationDate    | This is the expiration date of the user's profile. (i.e. account)  | smalldatetime | MsAcUsrProfile                             |  |
| externalRequestId | A SIPS-generated identifier that uniquely defines an order generated through the Machine-to-Machine Gateway.             | varchar(50)   | EcAcOrder                                  |  |
| finishDateTime    | The column contains the time when all requests for the order have been completed.  | smalldatetime | EcAcRequest<br>EcAcOrder                   |  |
| firstName         | This is the user's first name.   | varchar(20)   | EcAcRequest<br>MsAcUsrProfile<br>EcAcOrder |  |
| ftpAddress        | This column holds a request's ftp staging address.   | varchar(128)  | EcAcRequest                                |  |
| ftpPassword       | This column holds the ftp password for the staging request.  | varchar(50)   | EcAcRequest                                |  |

**Table 5-22. MSS Database Column Specifications (7 of 14)**

| Column                  | Description  | Data Type    | Table  | Valid Values   |
|-------------------------|--|--------------|--|--|
| GTWYUsrType             | For registered users, the gateway will retrieve their user profile and check this attribute. If it is filled, it will use GTWYUsrType and a generated password to log the user into DCE (rather than the userID attribute). A DCE account for GTWYUsrType must exist with the current V0GwPwd as its password. | varchar(20)  | MsAcUsrProfile                                 | DAACOPS - DAAC Operations User<br>ECSDEV - ECS Development User<br>V0CERES - V0 CERES User<br>GUEST - Guest User |
| homeDAAC                | The name of the DAAC, where the request for a user profile was processed.  | varchar(3)   | MsAcUsrProfile<br>MsAcOpPrivilege<br>EcAcOrder |  |
| hostName                | Identifies the host site.  | varchar(30)  | MsAcUsrAudit                                   |  |
| internetAffiliation     | The column contains the user's internet affiliation.   | varchar(14)  | MsAcUsrProfile                                 |  |
| InternetAffiliationCode | The column contains the user's internet affiliation.   | varchar(14)  | MsAcInternetAffiliationCode                    |  |
| InternetAffiliationDesc | This column contains a description for an internet affiliation code.   | varchar(255) | MsAcInternetAffiliationCode                    |  |
| lastName                | This is the user's last name.  | varchar(20)  | EcAcRequest<br>EcAcOrder<br>MsAcUsrProfile     |  |
| location                | Indicates the area of the activity.  | varchar(20)  | MsAcUsrAudit                                   |  |
| mailAddrCity            | This is the user's mailing city address.   | varchar(35)  | MsAcUsrProfile                                 |  |
| mailAddrCountry         | This is the user's mailing country address.  | varchar(30)  | MsAcUsrProfile                                 |  |
| mailAddrFax             | This is the user's contact fax number.   | varchar(22)  | MsAcUsrProfile                                 |  |
| mailAddrPhone           | This is the user's contact phone number.   | varchar(22)  | MsAcUsrProfile                                 |  |
| mailAddrState           | This is the user's mailing state address.  | varchar(20)  | MsAcUsrProfile                                 |  |

**Table 5-22. MSS Database Column Specifications (8 of 14)**

| Column           | Description  | Data Type    | Table                                      | Valid Values |
|------------------|--|--------------|--|--------------|
| mailAddrStreet1  | This is the user's mail street address.  | varchar(32)  | MsAcUsrProfile                             |              |
| mailAddrStreet2  | This is the user's mail street address. Used only if address street length is longer than what can be accommodated in mailAddrStreet1. | varchar(32)  | MsAcUsrProfile                             |              |
| mailAddrStreet3  | This is the user's mail street address. Used only if address street length is longer than what can be accommodated in mailAddrStreet3. | varchar(32)  | MsAcUsrProfile                             |              |
| mailAddrZip      | This is the user's mail zip code address.  | varchar(15)  | MsAcUsrProfile                             |              |
| MediaFormatCode  | This is the type of media format.  | varchar(20)  | MsAcMediaFormatCode                        |              |
| MediaFormatDesc  | This is the description of the media format.   | varchar(255) | MsAcMediaFormatCode                        |              |
| mediaQuantity    | The number of media requested for an order.  | numeric(3)   | EcAcRequest                                |              |
| mediaType        | This column describes the media type of request distribution.  | varchar(20)  | EcAcRequest                                |              |
| MediaTypeCode    | This column identifies the media type of request distribution.   | varchar(20)  | MsAcMediaTypeCode                          |              |
| MediaTypeDesc    | This is the description of a media type.   | varchar(255) | MsAcMediaTypeCode                          |              |
| middleInit       | This column holds the user's middle name.  | char(1)      | EcAcRequest<br>EcAcOrder<br>MsAcUsrProfile |              |
| motherMaidenName | This is the user's mother's maiden name, recorded for security reasons.  | varchar(20)  | MsAcUsrProfile                             |              |
| nasaUser         | This field identifies whether a user works for NASA and his level of access to NASA data.  | char(1)      | MsAcUsrProfile                             |              |

**Table 5-22. MSS Database Column Specifications (9 of 14)**

| Column          | Description   | Data Type   | Table                    | Valid Values |
|-----------------|---|-------------|--------------------------|--------------|
| numBytes        | This column contains the number of bytes of a request.  | float(8)    | EcAcRequest              |              |
| numFiles        | This column contains the number of files that fill a request.   | numeric(9)  | EcAcRequest              |              |
| numGranule      | This column contains the number of granules that fill a request.  | numeric(9)  | EcAcRequest              |              |
| orderDesc       | This column holds a description of the user's order.  | varchar(50) | EcAcOrder                |              |
| orderDistFormat | This column holds the media format of the user's order.   | varchar(64) | EcAcOrder                |              |
| orderGranule    | This column contains the number of granules that fill an order.   | numeric(9)  | EcAcOrder                |              |
| orderHomeDAA C  | This column is passed from EcAcOrder, this is the home DAAC where the order was placed (same values as daac_short). | varchar(3)  | EcAcRequest<br>EcAcOrder |              |
| orderId         | This column identifies an order.  | varchar(10) | EcAcRequest<br>EcAcOrder |              |
| orderId         | This column is passed from the EcAcOrder table and identifies an order.   | numeric(10) | EcAcOrderId              |              |
| orderMedia      | This column holds the media type of the user's order.   | varchar(20) | EcAcOrder                |              |
| orderPriority   | This column holds the priority of the user's order.   | varchar(10) | EcAcOrder                |              |
| orderSource     | This column holds the where the source of the order.  | varchar(21) | EcAcOrder                |              |

**Table 5-22. MSS Database Column Specifications (10 of 14)**

| Column         | Description  | Data Type    | Table            | Valid Values   |
|----------------|--|--------------|------------------|--|
| orderStatus    | This column holds the current status of an order.  | varchar(30)  | EcAcOrder        | Pending, Operator Intervention, Staging, Transferring, Waiting For Shipment, Shipped, Aborted, Canceled, Terminated, Subsetting, Subsetting Staging, Prep for Distribution, SDSRV Staging, Queued, Waiting for data, Waiting for processing, Being Processed, Completed processing, Expired, Awaiting L1B, L1B received. |
| orderType      | The type of an order can be one of the following:<br>-On Demand (valid value: PR)<br>-Standing On Demand (valid value: ST)<br>-MTMGW (valid value: MM)<br>-Regular orders (valid value: blank) | varchar(2)   | EcAcOrder        |  |
| organization   | This is the user's organization.   | varchar(60)  | MsAcUsrProfile   |  |
| parentId       | A request can be broken into subrequests, and this column holds the ID for that request.   | varchar(10)  | EcAcRequest      |  |
| PriorityCode   | Defines a list of possible priority values.  | varchar(10)  | MsAcPriorityCode |  |
| PriorityDesc   | This is the description of a request priority code.  | varchar(255) | MsAcPriorityCode |  |
| privilegeLevel | This column contains the highest priority level a user can give his or her order.  | varchar(10)  | MsAcUsrProfile   |  |
| program        | This is the user's program name.   | varchar(50)  | MsAcUsrAudit     |  |
| projectName    | This is the user's project name.   | varchar(30)  | MsAcUsrProfile   |  |

**Table 5-22. MSS Database Column Specifications (11 of 14)**

| Column                | Description   | Data Type     | Table                    | Valid Values |
|-----------------------|---|---------------|--------------------------|--------------|
| receiveDateTime       | This attribute holds the time the order and/or request was submitted (i.e., created) to the SDSRV, set by the V0 Gateway when it created the EcAcRequest. | smalldatetime | EcAcRequest<br>EcAcOrder |              |
| requestDesc           | This column holds the request's description.  | varchar(50)   | EcAcRequest              |              |
| requestDistFormat     | This column holds the distribution media format.  | varchar(64)   | EcAcRequest              |              |
| requestId             |   | numeric(10)   | EcAcRequestId            |              |
| requestId             | This column holds the identifier for a request.   | varchar(10)   | EcAcRequest              |              |
| requestPriority       | This column holds the user's request priority.  | varchar(10)   | EcAcRequest              |              |
| requestProcessingDAAC | The site at which the order is actually being processed.  | varchar(3)    | EcAcRequest              |              |
| requestStatus         | This column holds the user's request status.  | varchar(30)   | EcAcRequest              |              |
| requestType           | This column identifies the type of request received or the type of request to be triggered by a subscription (e.g., "Notification ftp-pull").             | varchar(2)    | EcAcRequest              |              |
| researchField         | This is the research field available in the system.   | varchar(64)   | MsAcUsrProfile           |              |
| ResearchFieldCode     | This is the research field available in the system.   | varchar(64)   | MsAcResearchFieldCode    |              |
| ResearchFieldDesc     | This is the research field description.   | varchar(255)  | MsAcResearchFieldCode    |              |
| roleID                | The column contains an operator's role.   | varchar(15)   | role_to_cots             |              |

**Table 5-22. MSS Database Column Specifications (12 of 14)**

| Column          | Description   | Data Type   | Table                                      | Valid Values |
|-----------------|---|-------------|--|--------------|
| rpcId           | This column contains the ID of the RPC generated by the MTMGW before sending an acquire request to SDSRV. The MSS Accountability Service shall keep an external request ID and a rpcID as part of the order tracking information. | char(250)   | EcAcOrder                                  |              |
| shipAddrCity    | This is the user's city address to where the request will be shipped.   | varchar(35) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrCountry | This is the user's country address to where the request will be shipped.  | varchar(30) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrFax     | This is the user's fax number to where the request will be shipped.   | varchar(22) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrPhone   | This is the user's phone address to where the request will be shipped.  | varchar(22) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrState   | This is the user's state address to where the request will be shipped.  | varchar(20) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrStreet1 | This is the user's street address to where the request will be shipped.   | varchar(32) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrStreet2 | This is the user's street address to where the request will be shipped. Used only when street address length is longer than what can be accommodated in shipAddrStreet1.  | varchar(32) | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |

**Table 5-22. MSS Database Column Specifications (13 of 14)**

| Column                | Description  | Data Type     | Table                                      | Valid Values |
|-----------------------|--|---------------|--|--------------|
| shipAddrStreet3       | This is the user's street address to where the request will be shipped. Used only when street address length is longer than what can be accommodated in shipAddrStreet3. | varchar(32)   | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipAddrZip           | This is the user's zip code address to where the request will be shipped.  | varchar(15)   | MsAcUsrProfile<br>EcAcOrder<br>EcAcRequest |              |
| shipContactName_First |  | varchar(20)   | MsAcUsrProfile                             |              |
| shipContactName_Last  |  | varchar(20)   | MsAcUsrProfile                             |              |
| shipContactName_MI    |  | char(1)       | MsAcUsrProfile                             |              |
| shipContactOrg        |  | varchar(60)   | MsAcUsrProfile                             |              |
| shipContactTitle      |  | varchar(5)    | MsAcUsrProfile                             |              |
| shipDateTime          | This column holds the time the last request for the order was shipped, this time is set by MSS when propagating request status to the order.                             | smalldatetime | EcAcRequest<br>EcAcOrder                   |              |
| shipEMailAddr         |  | varchar(255)  | MsAcUsrProfile                             |              |
| standingOrderId       | ID of a standing order.  | varchar(10)   | EcAcOrder                                  |              |
| standingRequestID     | ID of a standing request.  | varchar(10)   | EcAcRequest                                |              |
| startTime             | This column holds the time set by DDIST to the first time DDIST started to process the request, i.e., start the staging of its data, and the request status.             | smalldatetime | EcAcRequest<br>EcAcOrder                   |              |
| status                | The status of a user's request for a user profile establishment.   | varchar(15)   | MsAcUsrAudit                               |              |
| StatusCode            | This is the status of a request (same values as orderStatus).  | varchar(22)   | MsAcStatusCode                             |              |

**Table 5-22. MSS Database Column Specifications (14 of 14)**

| Column           | Description   | Data Type     | Table                                      | Valid Values  |
|------------------|---|---------------|--|---|
| StatusDesc       | This is the request status code's description.                  | varchar(255)  | MsAcStatusCode                             |   |
| tapeFormat       | This column holds the format of the tape for the request.       | varchar(20)   | EcAcRequest                                |   |
| This_DAAC        | Ids the DAAC where work processed.                              | char(1)       | EcMsDAACSites                              |   |
| timeOfLastUpdate | This column holds the time of the last order or request update. | smalldatetime | EcAcOrder,<br>EcAcRequest                  |   |
| title            | This is the title of a user. (i.e., Dr.)                        | varchar(5)    | MsAcUsrProfile<br>EcAcRequest<br>EcAcOrder | Dr      Doctor<br>Mr     Mister<br>Ms    Miss/Mrs.<br>Miss    Miss<br>Mrs    Mrs.<br>Rev   Reverend<br>Sr    Senior |
| userId           | This column uniquely identifies a registered user.              | varchar(14)   | MsAcUsrProfile<br>EcAcOrder                |   |
| userId           | A registered user id, a guest user id, or an application id.    | varchar(12)   | MsAcUsrAudit<br>MsAcOpPrivilege            |   |

#### **5.1.4 Column Domains**

Domains specify the ranges of values allowed for a given table column. Sybase supports the definition of specific domains to further limit the format of data for a given column. Sybase domains are, in effect, user-defined data types. There are no domains defined for the MSS databases.

#### **5.1.5 Rules**

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. All rules defined in Sybase for the MSS database are described herein.

There are no rules defined in the MSS databases.

#### **5.1.6 Defaults**

Defaults are used to supply a value for a column when one is not defined at insert time. All defaults defined in Sybase in the MSS database are described herein.

There are no defaults defined in the MSS databases.

### **5.1.7 Views**

Sybase allows the definition of views as a means of limiting an application or users access to data in a table or tables. Views create a logical table from columns found in one or more tables. There are no views defined for MSS.

### **5.1.8 Integrity Constraints**

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks. Sybase 11 is only ANSI-92 compliant, however, therefore its constraints support “restrict-only” operations. This means that a row cannot be deleted or updated if there are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations cannot be performed if a declarative constraint has been used. There are no declarative integrity constraints defined in the MSS database.

### **5.1.9 Triggers**

Sybase supports the enforcement of business policy via the use of triggers. A trigger is best defined as a set of activities or checks that should be performed automatically whenever a row is inserted, updated, or deleted from a given table. Sybase allows the definition of insert, update, and delete trigger per table. A listing of each of the triggers in the MSS database is given in Table 5-23. A brief definition of each of these triggers follows. Trigger implementation may vary by drop/patch and therefore is not listed here.

**Table 5-23. Trigger Listing**

| Table           | Trigger                  | Description           |
|-----------------|--------------------------|-----------------------|
| EcAcOrder       | TrigUpdEcAcOrder         | UpdateTrigger         |
| EcAcOrder       | TrigInsEcAcOrder         | InsertTrigger         |
| EcAcRequest     | TrigInsEcAcRequest       | InsertTrigger         |
| EcAcRequest     | TrigUpdEcAcRequest       | UpdateTrigger         |
| EcAcRequest     | TrigDelEcAcRequest       | DeleteTrigger         |
| MsAcOpPrivilege | TrigUpdMsAcOpPrivilege   | UpdateTrigger         |
| MsAcUsrProfile  | TrigInsUpdMsAcUsrProfile | Insert/Update Trigger |
| MsAcUsrProfile  | TrigDelMsAcUsrProfile    | DeleteTrigger         |

### **5.1.10 Stored Procedures**

Sybase also includes support for business policy via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business policy and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. A listing of each the stored procedures in the MSS database is given in Table 5-24. A brief definition of each of these stored procedures

follows. Stored procedure implementation may vary by drop/patch and therefore is not listed here.

**Table 5-24. Procedure Listing**

| Name                       | Description  |
|----------------------------|--|
| datawarning                | Notifies DBA when a data segment threshold is crossed.         |
| logdump                    | Dump the log when log segment threshold is crossed.            |
| logwarning                 | Notify the DBA when log segment approaches capacity threshold. |
| ProcCreateNewRequest       | Used by OMS to create new requests from V0GTWY                 |
| ProcCreateNewOrder         | Used by OMS to create new orders from V0GTWY                   |
| ProcGetShipAddress         | Retrieves shipping information                                 |
| ProcUpdateShipAddress      | Updates shipping information                                   |
| ProcInsEcAcRequest         | Used by OMS Gui to create new requests during partitioning     |
| ProcDecrementEcAcRequestId | Decrements the request ID by 1                                 |
| ProcDecrementOrderId       | Decrements the order ID by 1                                   |
| ProcIncrementEcAcRequestId | Increments the request ID by 1                                 |
| ProcIncrementOrderId       | Increments the order ID by 1                                   |

## 5.2 Flat File Usage

A flat file is an operating system file that is written and subsequently read, generally independent of other files that exist, and usually static in nature. There are cases when the implementation of persistent data is better suited to a flat file than to a database. MSS Subsystem file usage is detailed in this section via file, block, field, and domain definitions.

### 5.2.1 File Descriptions

A summary listing of the files in the MSS Subsystem is given in Table 5-25 together with a brief description of the file usage. Many different record formats are used in ECS including ODL, HDF, HDF EOS, block, fixed length, variable length, etc.

**Table 5-25. Flat File Descriptions (1 of 2)**

| File Name                             | File Type | Record Format                   | File Description   |
|---------------------------------------|-----------|---------------------------------|--|
| <b>Accountability component files</b> |           |                                 |  |
| MsAcAffiliation.dat                   | ASCII     | Single line records. One field  | Contains the list of valid affiliation names for selection of the user's affiliation.  |
| MsAcAsterCategory.dat                 | ASCII     | Single line records. Two fields | Contains the list of valid Aster DAR user categories for selection of the user's category.   |
| MsAcCountry.dat                       | ASCII     | Single line records. One field  | Contains the list of valid country names for selecting a user's country of residence.  |
| MsAcDceGroup.dat                      | ASCII     | Single line records. One field  | Contains DCE account group. (e.g. SCIENTIST, ENGINEER)   |
| MsAcDceOrganization.dat               | ASCII     | Single line records. One field  | DCE account organization. (e.g. NASA)  |
| MsAcGateWayType.dat                   | ASCII     | Single line records. One field  | User type. (e.g. DAACOPS, GUEST)   |
| MsAcHomeDAAC.dat                      | ASCII     | Single line records. One field  | Contains a list of valid DAAC names for selection of the user's home DAAC.   |
| MsAcNasaUser.dat                      | ASCII     | Single line records. One field  | Contains Y (yes) and N (no) to indicate NASA user or not.  |
| MsAcPrimaryAreaStudy.dat              | ASCII     | Single line records. One field  | Contains the list of primary study areas for selecting the user's area.  |
| MsAcPrivilegeLevel.dat                | ASCII     | Single line records. One field  | Contains a list of privilege levels for selecting the user's privilege level.  |
| MsAcState.dat                         | ASCII     | Single line records. One field  | Contains the list of states in the USA for selecting a user's state of residence.  |
| MsAcTitle.dat                         | ASCII     | Single line records. One field  | Contains the list of valid titles for selecting a user's title.  |
| MsAcType.dat                          | ASCII     | Single line records. One field  | Contains USA or NONE to indicate US user or not.   |
| <b>Subagent component files</b>       |           |                                 |  |
| MsAgEventsHoldingFile                 | binary    | EcAgEvent objects               | If subagent is not connected to the deputy agent, the events holding file is used to store events to be processed upon connection to deputy. |

**Table 5-25. Flat File Descriptions (2 of 2)**

| <b>File Name</b>       | <b>File Type</b> | <b>Record Format</b>  | <b>File Description</b>   |
|------------------------|------------------|-----------------------|---|
| MsAgBindingVectorFile  | binary           | MsAgMgmtHandle object | The binding vector file contains binding information to ecs servers such as the uuid and the mode. Whenever a running ecs server is detected by subagent, it adds an entry to the binding vector file. Similarly, when a ecs servers is shutdown or dies for any other reason, its entry is removed from the binding vector. If the subagent is restarted, it uses the information in the binding vector to reconnect with the servers that it was previously monitoring. |
| MsAgInstanceFile       | binary           | integers              | The instance ID file contains the number that was last assigned to a server by subagent. This number is saved to ensure a unique instance ID across different servers. Whenever subagent needs to assign an instance ID to a server, it reads the value in this file, increments it by one, and then assigns it to the server. The incremented value is written back to the instance ID file.   |
| MsCmActiveModesFile    | binary           | list of strings       | This file contains a list of all the active modes that subagent should discover. The mode manager GUI maintains the list.   |
| MsCmAvailableModesFile | binary           | list of strings       | This file is a master list of all the modes available on all the ecs hosts within a cell. Each subagent in the cell adding all the installed modes on its host creates available modes file. The purpose of this file is to provide a list of all the modes that can be inserted into the active mode file.   |

## 5.2.2 Block Specifications

Table 5-26 identifies the block formats used in MSS files.

**Table 5-26. Flat File Block Descriptions**

| File Name   | Block Name | Block Description                      |
|---|------------|--|
| <b>Accountability component file block descriptions</b> |            |  |
| MsAcAffiliation.dat                                     | (standard) | Single line records; contain 1 field.  |
| MsAcAsterCategory.dat                                   | (standard) | Single line records; contain 2 fields. |
| MsAcCountry.dat   | (standard) | Single line records; contain 1 field.  |
| MsAcDceGroup.dat  | (standard) | Single line records; contain 1 field.  |
| MsAcDceOrganization.dat                                 | (standard) | Single line records; contain 1 field.  |
| MsAcGateWayType.dat                                     | (standard) | Single line records; contain 1 field.  |
| MsAcHomeDAAC.dat  | (standard) | Single line records; contain 1 field.  |
| MsAcNasaUser.dat  | (standard) | Single line records; contain 1 field.  |
| MsAcPrimaryAreaStudy.dat                                | (standard) | Single line records; contain 1 field.  |
| MsAcPrivilegeLevel.dat                                  | (standard) | Single line records; contain 1 field.  |
| MsAcState.dat   | (standard) | Single line records; contain 1 field.  |
| MsAcTitle.dat   | (standard) | Single line records; contain 1 field.  |
| MsAcType.dat  | (standard) | Single line records; contain 1 field.  |

## 5.2.3 Field Specifications

Brief specifications of the fields present within the MSS Subsystem flat files are contained in Table 5-27. The fields are ordered alphabetically by File Name.

**Table 5-27. Flat File Field Specifications (1 of 2)**

| File Name/Block Name                               | Field Name              | Data Type | Field Description                     |
|--|-------------------------|-----------|---------------------------------------|
| MsAcAffiliation.dat                                | affiliation             | String    | Valid affiliation name                |
| MsAcAsterCategory.dat                              | Aster category ID       | Char 2    | Two digit Aster DAR category ID       |
|  | Aster category mnemonic | String    | Mnemonic corresponding to category ID |
| <b>Accountability component field descriptions</b> |                         |           |                                       |
| MsAcCountry.dat                                    | country                 | String    | Valid country name                    |
| MsAcDceGroup.dat                                   | DCE group               | String    | DCE group                             |
| MsAcDceOrganization.dat                            | DCE organization        | String    | DCE organization                      |
| MsAcGateWayType.dat                                | gateway type            | String    | Gateway type                          |
| MsAcHomeDAAC.dat                                   | home DAAC               | String    | Valid DAAC name                       |

**Table 5-27. Flat File Field Specifications (2 of 2)**

| File Name/Block Name     | Field Name            | Data Type | Field Description        |
|--------------------------|-----------------------|-----------|--------------------------|
| MsAcNasaUser.dat         | NASA user indication  | Char 1    | NASA user flag           |
| MsAcPrimaryAreaStudy.dat | primary area of study | String    | Valid primary study area |
| MsAcPrivilegeLevel.dat   | privilege level       | String    | Valid privilege level    |
| MsAcState.dat            | state                 | String    | State of residence       |
| MsAcTitle.dat            | title                 | String    | User's title             |
| MsAcType.dat             | type                  | String    | User location type       |

#### 5.2.4 Domain Definitions

Domain definitions specify the data type and valid content of fields within a file (e.g., specific values for a limited set of data, ranges of numeric data, units of measure for applicable data). This information is generally used by software to edit incoming data for validity prior to writing or changing data within the file. Use of domain values in updating (adding and changing) records within files preserves the integrity of the data within the file. The domain definitions for the MSS Subsystem are presented in Table 5-28.

**Table 5-28. Flat File Domain Definitions**

| File Name/Block Name                          | Field Name              | Domain Description  |
|---|-------------------------|---|
| <b>Accountability component field domains</b> |                         |   |
| MsAcAffiliation.dat                           | affiliation             | String:<br>K-12<br>Commercial<br>Government<br>University<br>Other  |
| MsAcAsterCategory.dat                         | Aster category ID       | Integer: 0-99   |
|   | Aster category mnemonic | String:<br>(category 0 is not an Aster DAR user)<br>MITI/NASA<br>EOS member<br>IEOS agencies<br>ASTER Science Team Leader<br>US Team Leader<br>ASTER Science Working Groups<br>ASTER Science Team Member<br>AO User |

| <b>File Name/Block Name</b> | <b>Field Name</b> | <b>Domain Description</b>  |
|-----------------------------|-------------------|--|
|                             |                   | Special-Priority Japan user<br>EOS Science Project Office<br>ASTER Science Project (SSSG)<br>ASTER CDS/ESDIS Project<br>ASTER Instrument Team<br>Category 14<br>Category 15<br>(through)<br>Category 99  |
| MsAcCountry.dat             | country           | String:<br>Afghanistan<br>Albania<br>Algeria<br>American Samoa<br>Andorra<br>Angola<br>Anguilla<br>Antarctica<br>Antigua and Barbuda<br>Argentina<br>Armenia<br>Aruba<br>Australia<br>Austria<br>Azerbaijan<br>Bahamas<br>Bahrain<br>Bangladesh<br>Barbados<br>Belarus<br>Belgium<br>Belize<br>Benin<br>Bermuda<br>Bhutan<br>Bolivia<br>Bosnia-Herzegovina<br>Botswana<br>Bouvet Island<br>Brazil<br>British Indian Ocean Territory<br>Brunei Darussalam<br>Bulgaria |

| File Name/Block Name | Field Name | Domain Description  |
|----------------------|------------|---|
|                      |            | Burkina Faso<br>Burundi<br>Cambodia<br>Cameroon<br>Canada<br>Cape Verde<br>Cayman Islands<br>Central Africa Republic<br>Chad<br>Chile<br>China<br>Christmas Island<br>Cocos(Keeling) Islands<br>Colombia<br>Comoros<br>Congo<br>Cook Island<br>Costa Rica<br>Cote d'Ivoire(Ivory Coast)<br>Croatia<br>Cuba<br>Cyprus<br>Czech Republic<br>Denmark<br>Djibouti<br>Dominica<br>Dominican Republic<br>East Timor<br>Ecuador<br>Egypt<br>El Salvador<br>Equatorial Guinea<br>Estonia<br>Ethiopia<br>Falkland Islands<br>Faroe Islands<br>Fiji<br>Finland<br>France<br>French Guiana<br>French Polynesia<br>French Southern Territories<br>Gabon |

| File Name/Block Name | Field Name | Domain Description   |
|----------------------|------------|--|
|                      |            | Gambia<br>Georgia<br>Germany<br>Ghana<br>Gibraltar<br>Greece<br>Greenland<br>Grenada<br>Guadeloupe<br>Guam<br>Guatemala<br>Guinea<br>Guinea-Bissau<br>Guyana<br>Haiti<br>Heard and McDonald Islands<br>Honduras<br>Hong Kong<br>Hungary<br>Iceland<br>India<br>Indonesia<br>Iran<br>Iraq<br>Ireland<br>Israel<br>Italy<br>Jamaica<br>Japan<br>Jordan<br>Kazakhstan<br>Kenya<br>Kiribati<br>North Korea<br>South Korea<br>Kuwait<br>Kyrgyzstan<br>Lao People's Democratic Republic<br>Latvia<br>Lebanon<br>Lesotho<br>Liberia<br>Libyan Arab Jamahiriva |

| File Name/Block Name | Field Name | Domain Description   |
|----------------------|------------|--|
|                      |            | Liechtenstein<br>Lithuania<br>Luxembourg<br>Macau<br>Madagascar<br>Malawi<br>Malaysia<br>Maldives<br>Mali<br>Malta<br>Marshall Islands<br>Martinique<br>Mauritania<br>Mauritius<br>Mexico<br>Micronesia<br>Moldova<br>Monaco<br>Mongolia<br>Montserrat<br>Morocco<br>Mozambique<br>Myanmar<br>Namibia<br>Nauru<br>Nepal<br>Netherlands<br>Netherlands Antilles<br>Neutral Zone<br>New Caledonia<br>New Zealand<br>Nicaragua<br>Niger<br>Nigeria<br>Niue<br>Norfolk Island<br>Northern Mariana Islands<br>Norway<br>Oman<br>Pakistan<br>Palau<br>Panama<br>Papua New Guinea |

| File Name/Block Name | Field Name | Domain Description   |
|----------------------|------------|--|
|                      |            | Paraguay<br>Peru<br>Philippines<br>Pitcairn Island<br>Poland<br>Portugal<br>Puerto Rico<br>Qatar<br>Reunion Island<br>Romania<br>Russian Federation<br>Rwanda<br>St. Helena<br>St. Kitts and Nevis<br>St. Lucia<br>St. Pierre and Miquelon<br>St. Vincent and the Grenadines<br>Samoa<br>San Marino<br>Sao Tome and Principe<br>Saudi Arabia<br>Senegal<br>Seychelles<br>Sierra Leone<br>Singapore<br>Slovak Republic<br>Slovenia<br>Solomon Islands<br>Somalia<br>South Africa<br>Spain<br>Sri Lanka<br>Sudan<br>Suriname<br>Svalbard and Jan Mayen Islands<br>Swaziland<br>Sweden<br>Switzerland<br>Syrian Arab Republic<br>Taiwan<br>Tajikistan<br>Tanzania<br>Thailand |

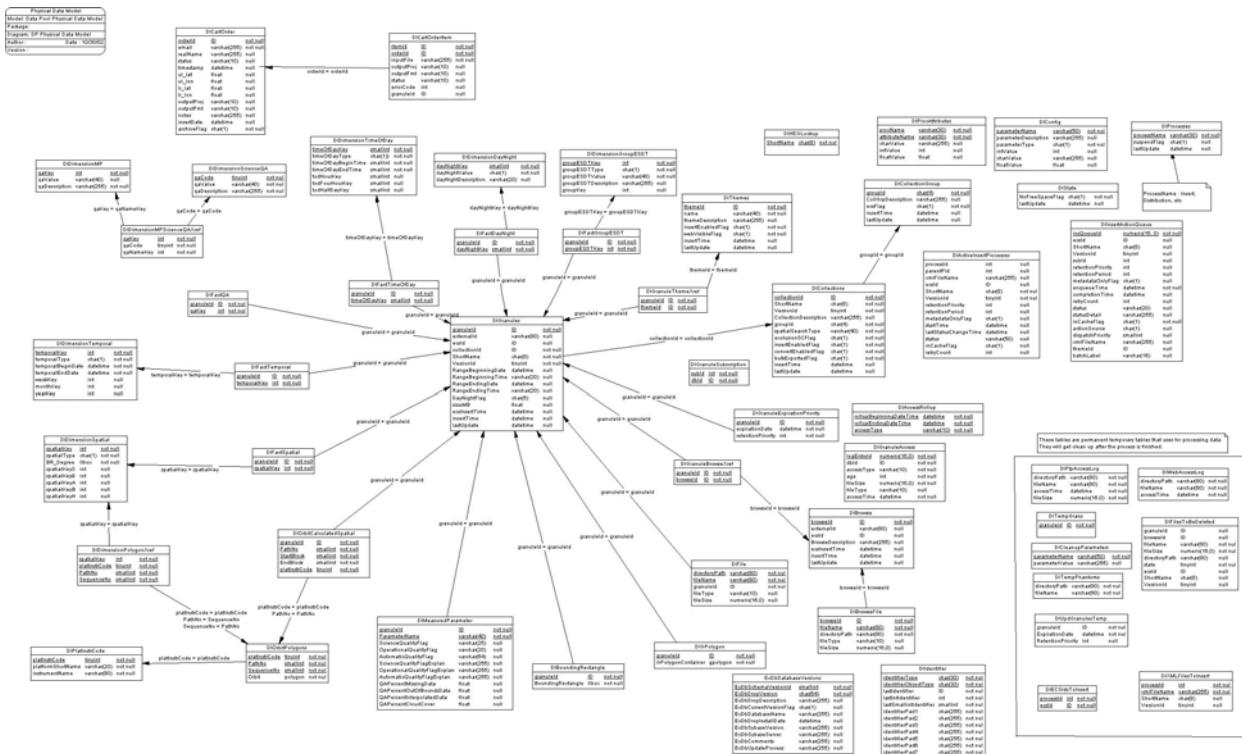
| <b>File Name/Block Name</b> | <b>Field Name</b> | <b>Domain Description</b>   |
|-----------------------------|-------------------|---|
|                             |                   | Togo<br>Tokelau<br>Tonga<br>Trinidad and Tobago<br>Tunisia<br>Turkey<br>Turkmenistan<br>Turks and Caicos Islands<br>Tuvalu<br>Uganda<br>Ukraine<br>United Arab Emirates<br>United Kingdom<br>United States<br>Uruguay<br>Uzbekistan<br>Vanuatu<br>Vatican City<br>Venezuela<br>Vietnam<br>Virgin Islands(British)<br>Virgin Islands(U.S.)<br>Wallis and Fortuna Islands<br>Western Sahara<br>Yemen<br>Yugoslavia(former)<br>Zaire<br>Zambia<br>Zimbabwe |
| MsAcGateWayType.dat         | Gateway type      | String:<br>DAACOPS<br>ECSDEV<br>V0CERES<br>GUEST  |
| MsAcHomeDAAC.dat            | user's home DAAC  | String:<br>ASF<br>CSN<br>EDC<br>GSF<br>JPL<br>LAR<br>NSC<br>ORN   |

| <b>File Name/Block Name</b> | <b>Field Name</b>     | <b>Domain Description</b>   |
|-----------------------------|-----------------------|---|
| MsAcNasaUser.dat            | NASA user             | String:<br>Y<br>N   |
| MsAcPrimaryAreaStudy.dat    | Primary area of study | String:<br>Air-Sea Interaction JPL<br>Atmospheric Aerosols LaRC<br>Biogeochemical Dynamics ORNL<br>Biological Oceanography JPL<br>Cryospheric Studies NSIDC<br>Geophysics NSIDC<br>Global Biosphere GSFC<br>Human Dimensions of Global Change SEDAAC<br>Hydrologic Cycle GSFC<br>Land Processes EDC<br>Physical Oceanography JPL<br>Polar Processes ASF<br>Radiation Budget LaRC<br>Sea Ice ASF<br>Tropospheric Chemistry LaRC<br>Upper Atmosphere Composition GSFC<br>Upper Atmosphere Dynamics GSFC |
| MsAcPrivilegeLevel.dat      | privilege level       | String:<br>XPRESS<br>Vhigh<br>HIGH<br>NORMAL<br>LOW   |
| MsAcState.dat               | State of residence    | Alabama<br>Alaska<br>Arizona<br>Arkansas<br>California<br>Colorado<br>Connecticut<br>Delaware<br>District of Columbia<br>Florida<br>Georgia<br>Hawaii<br>Idaho<br>Illinois<br>Indiana<br>Iowa   |

| <b>File Name/Block Name</b> | <b>Field Name</b> | <b>Domain Description</b>   |
|-----------------------------|-------------------|---|
|                             |                   | Kansas<br>Kentucky<br>Louisiana<br>Maine<br>Maryland<br>Massachusetts<br>Michigan<br>Minnesota<br>Mississippi<br>Missouri<br>Montana<br>Nebraska<br>Nevada<br>New Hampshire<br>New Jersey<br>New Mexico<br>New York<br>North Carolina<br>North Dakota<br>Ohio<br>Oklahoma<br>Oregon<br>Pennsylvania<br>South Carolina<br>South Dakota<br>Tennessee<br>Texas<br>Utah<br>Vermont<br>Virginia<br>Washington<br>West Virginia<br>Wisconsin<br>Wyoming |
| MsAcTitle.dat               | User's title      | String:<br>Dr<br>Mr<br>Ms<br>Miss<br>Mrs<br>Rev<br>Sr   |
| MsAcType.dat                | User location     | String:<br>USA<br>NONE  |

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## **Appendix A. Data Pool Subsystem Entity Relationship Diagram**



**Figure A-1. Data Pool System ERD**

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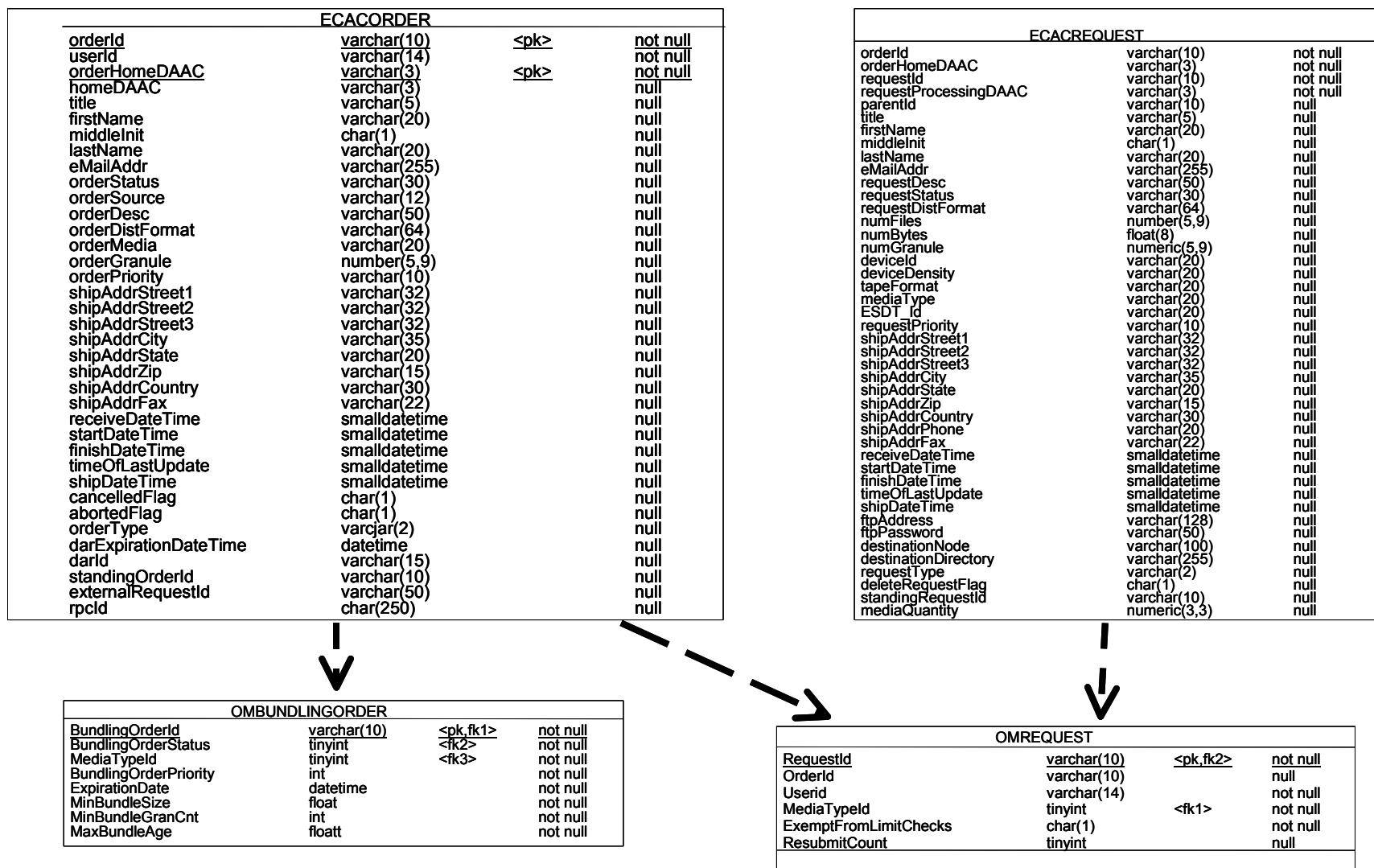
## Appendix B. Order Manager Entity Relationship Diagram

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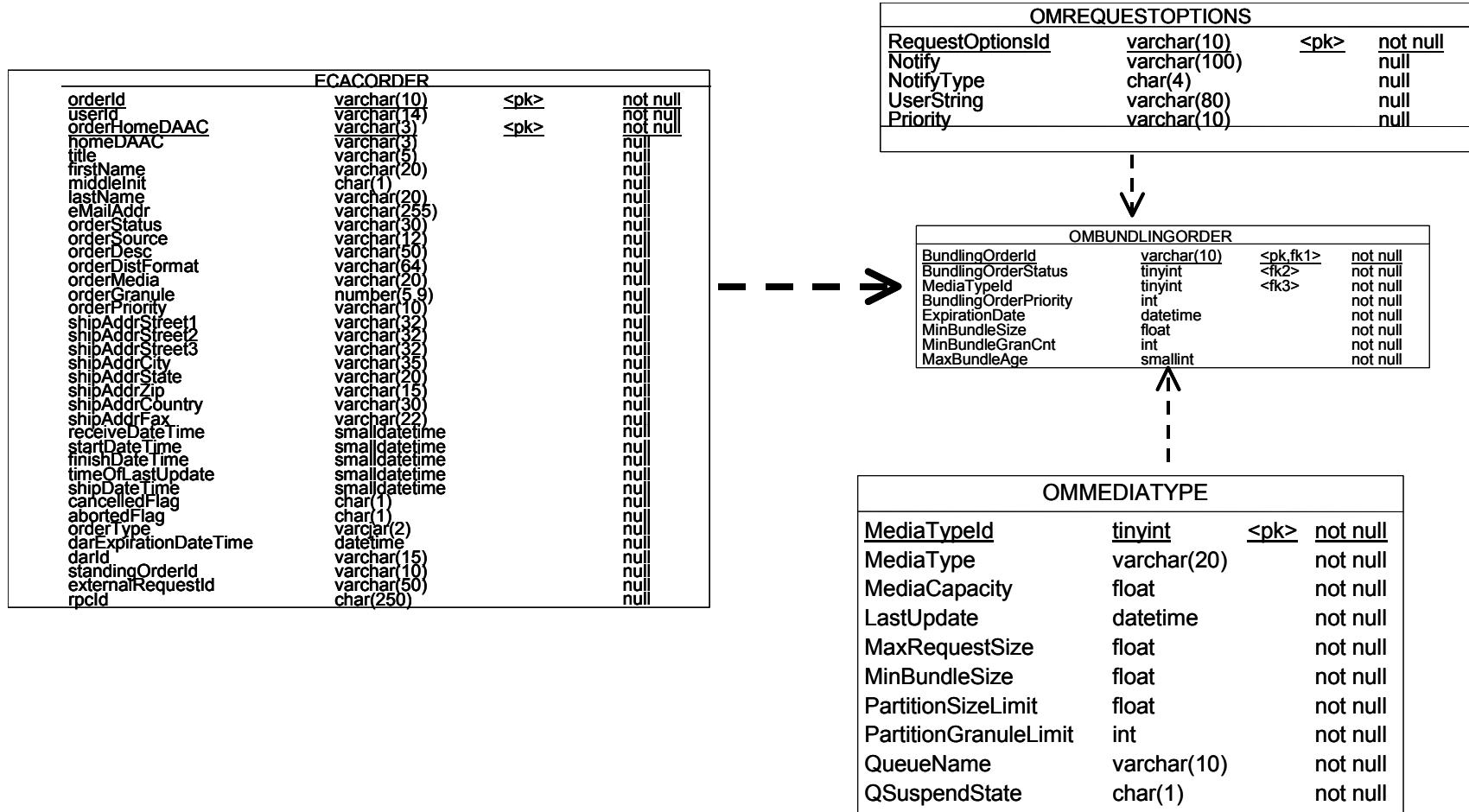
| EcDbDatabaseVersions   |             |      |
|------------------------|-------------|------|
| EcDbSchemaVersionId    | smallint    | null |
| EcDbDropVersion        | char(64)    | null |
| EcDbDropDescription    | varchar(    | null |
| EcDbCurrentVersionFlag | char(1      | null |
| EcDbDatabaseName       | varchar(255 | null |
| EcDbDropInstallDate    | datetim     | null |
| EcDbSybaseVersion      | varchar(255 | null |
| EcDbSybaseServer       | varchar(255 | null |
| EcDbComments           | varchar(255 | null |
| EcDbUpdateProcess      | varchar(255 | null |

| OmConfigParamete |            |           |          |  |
|------------------|------------|-----------|----------|--|
| ConfigId         | tinyint    | <u>pk</u> | not null |  |
| ParameterNam     | varchar(50 |           | not null |  |
| ParameterTyp     | char(1     |           | not null |  |
| ParameterDesc    | varchar(50 |           | not null |  |
| IntValu          | integer    |           | null     |  |
| CharValue        | varchar(5  |           | null     |  |
| FloatValue       | floa       |           | null     |  |

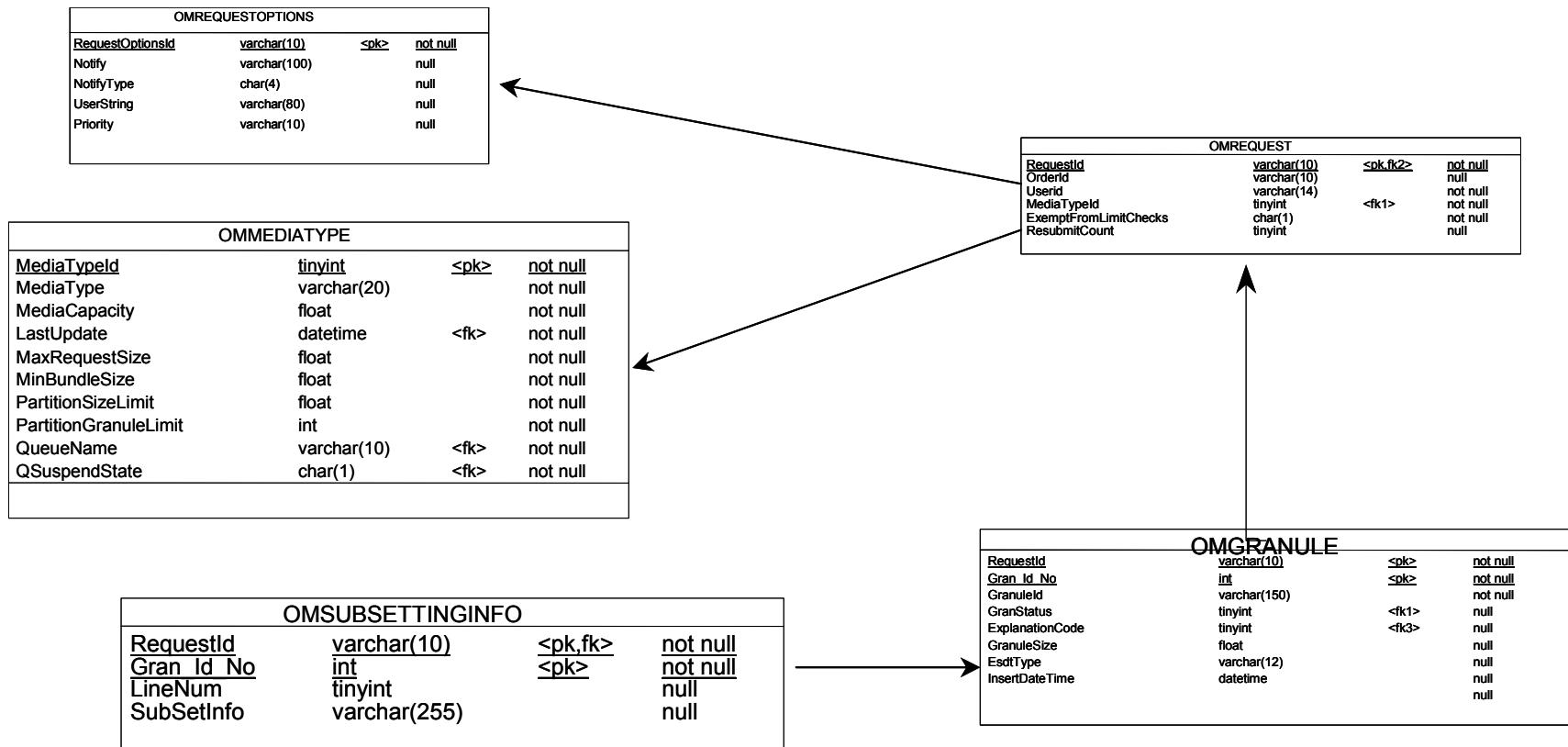
**Figure B-1. Order Manager Configuration Tables**



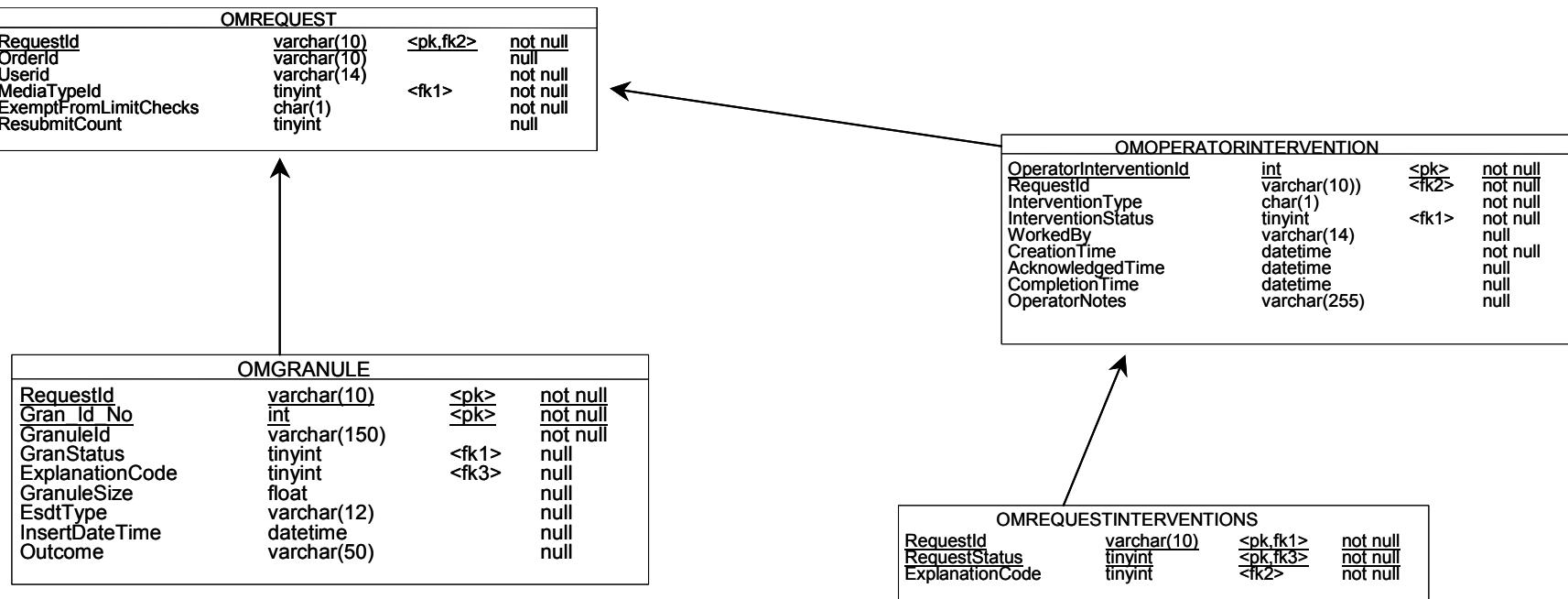
**Figure B-2. Order Manager/MSS Inter-Database Dependencies**



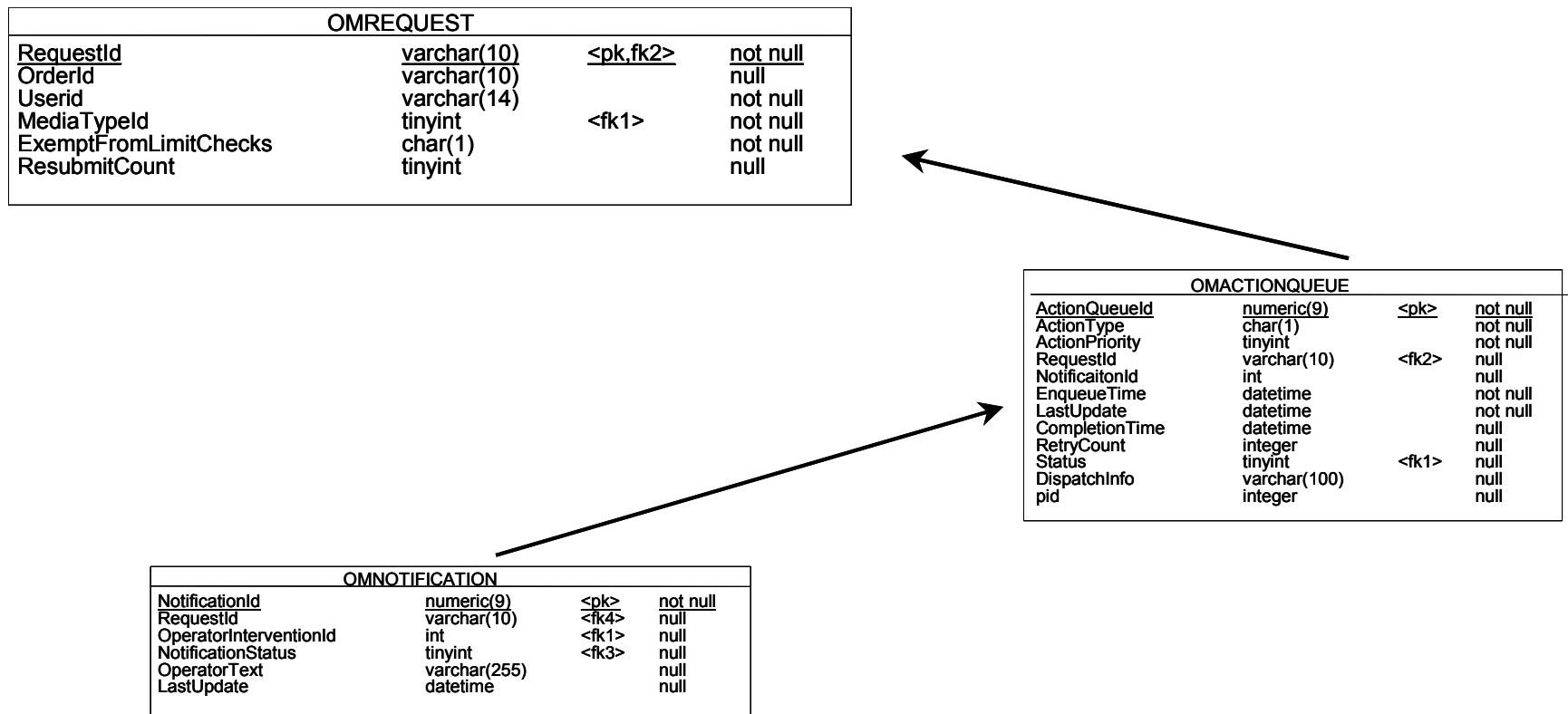
**Figure B-3. Order Manager Bundled Orders**



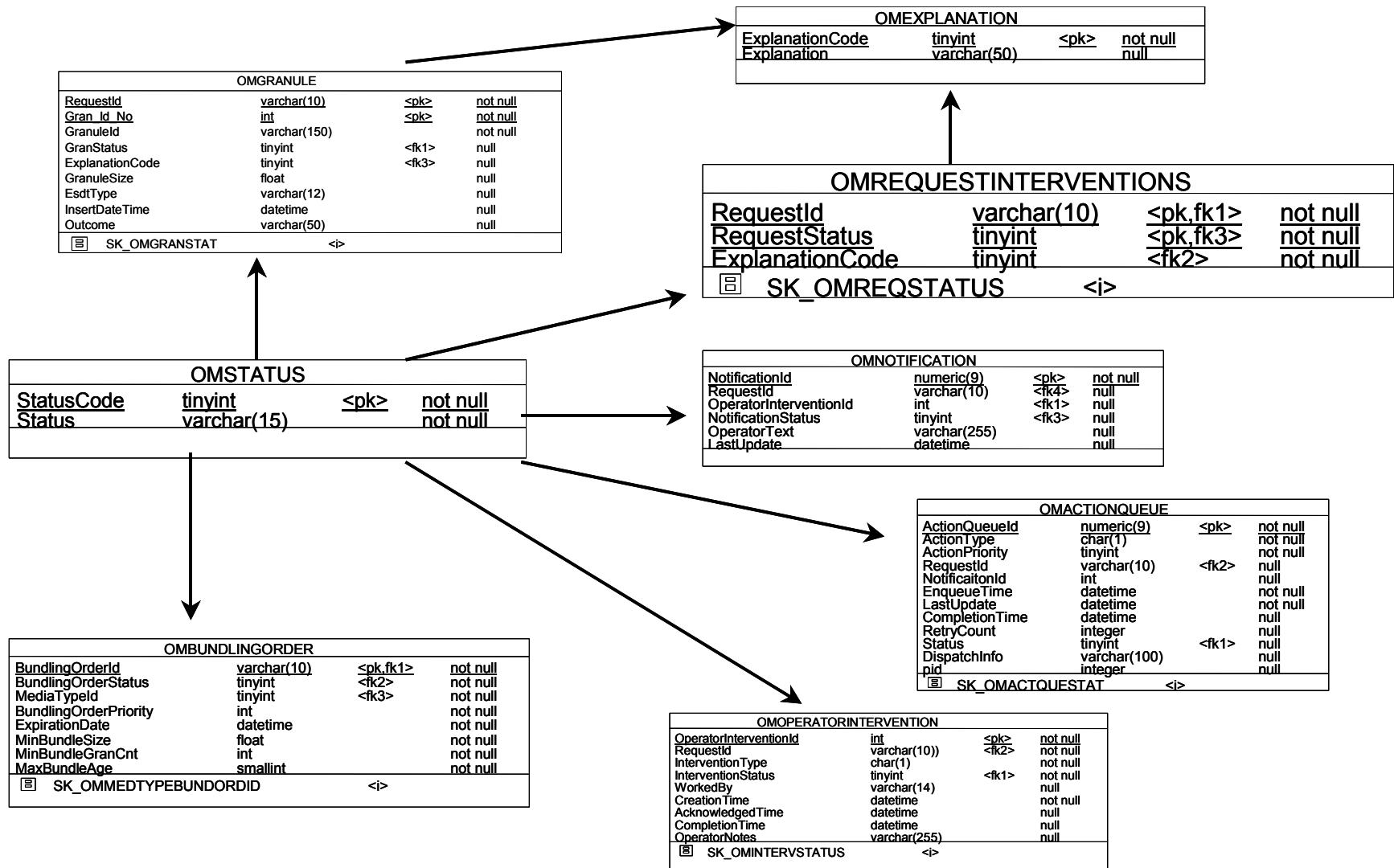
**Figure B-4. Order Manager Requests**



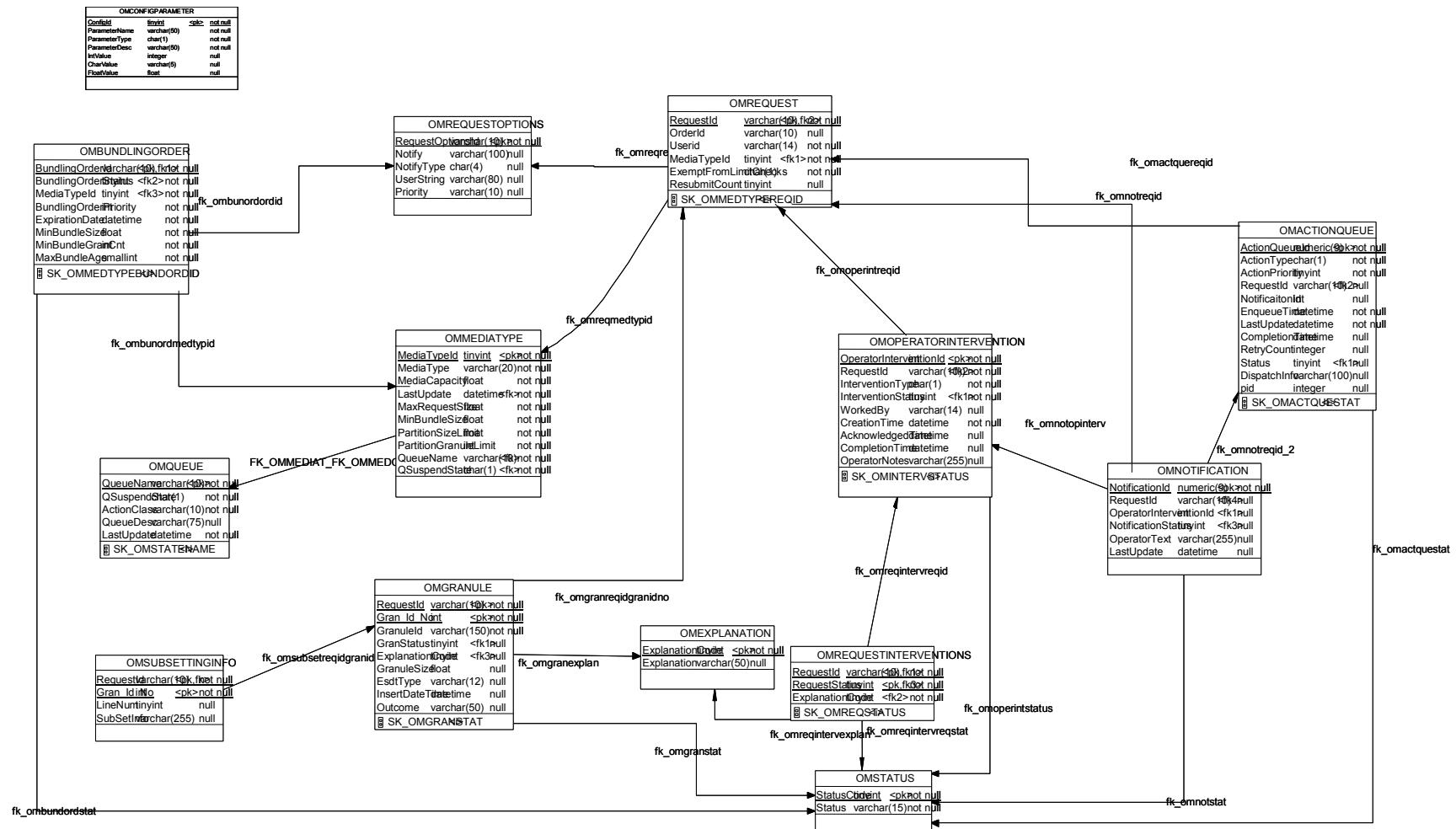
**Figure B-5. Order Manager Request Intervention**



**Figure B-6. Order Manager Action Dispatch**

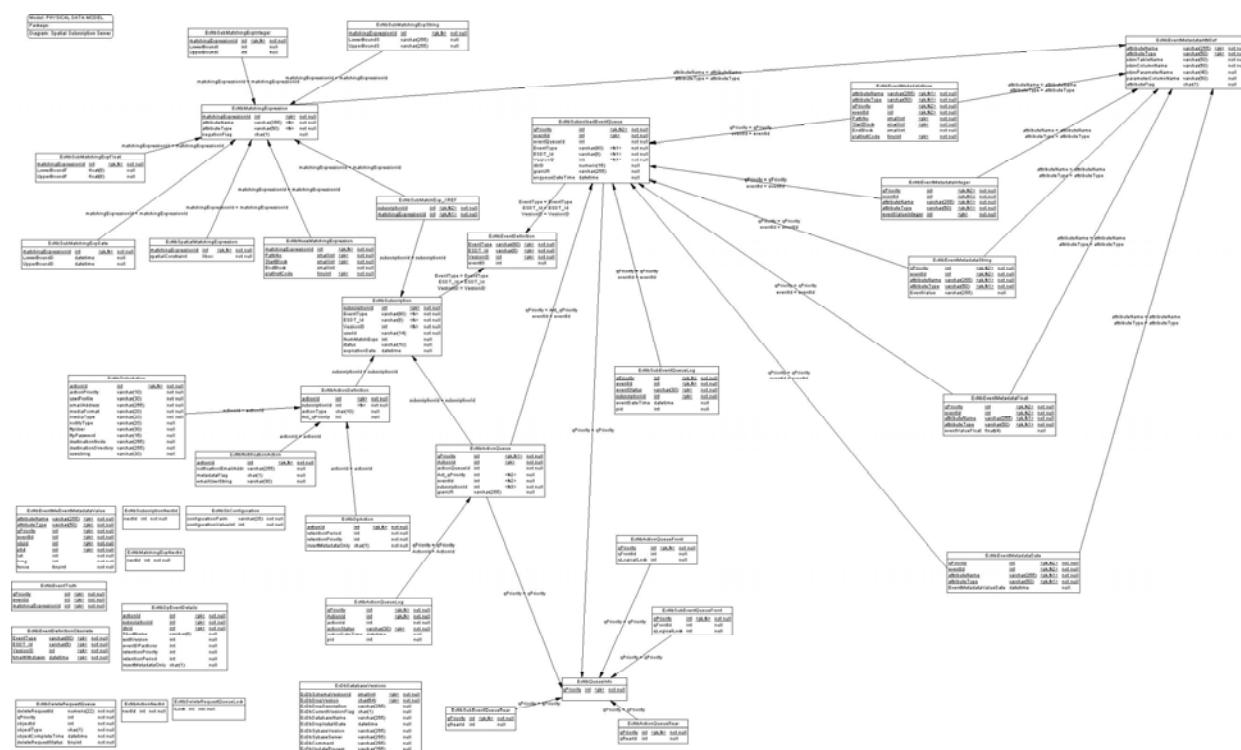


**Figure B-7. Order Manager Status**



**Figure B-8. Order Manager**

## **Appendix C. Spatial Subscription Server Entity Relationship Diagram**

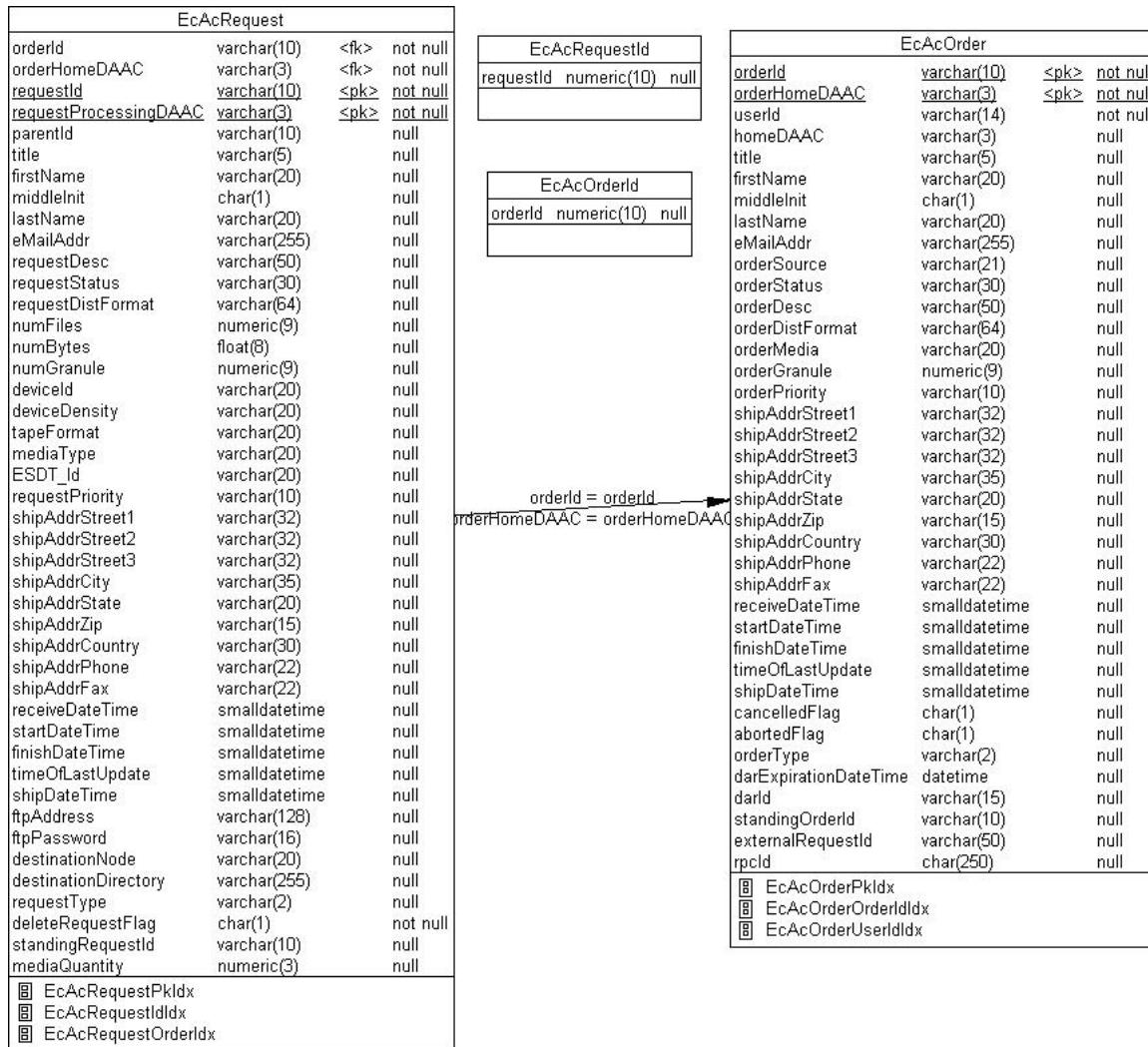


**Figure C-1. Spatial Subscription Server ERD**

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## Appendix D. MSS Entity Relationship Diagram

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**Figure D-1. Order Tracking Information**

| MsAcAffiliationCode    |              |               |
|------------------------|--------------|---------------|
| AffiliationCode        | varchar(16)  | <pk> not null |
| AffiliationDesc        | varchar(255) | null          |
| PK_MSACAFFILIATIONCODE |              |               |

| MsAcAsterCategory    |             |               |
|----------------------|-------------|---------------|
| asterCategoryId      | numeric(2)  | <pk> not null |
| asterCategory        | varchar(40) | null          |
| PK_MSACASTERCATEGORY |             |               |

| MsAcDAACCode    |              |               |
|-----------------|--------------|---------------|
| DAACAbbr        | varchar(3)   | <pk> not null |
| DAACShortName   | varchar(10)  | not null      |
| DAACLongName    | varchar(255) | null          |
| PK_MSACDAACCODE |              |               |

| MsAcInternetAffiliationCode    |              |               |
|--------------------------------|--------------|---------------|
| InternetAffiliationCode        | varchar(14)  | <pk> not null |
| InternetAffiliationDesc        | varchar(255) | null          |
| PK_MSACINTERNETAFFILIATIONCODE |              |               |

| MsAcMediaFormatCode    |              |               |
|------------------------|--------------|---------------|
| MediaFormatCode        | varchar(20)  | <pk> not null |
| MediaFormatDesc        | varchar(255) | null          |
| PK_MSACMEDIAFORMATCODE |              |               |

| MsAcMediaTypeCode    |              |               |
|----------------------|--------------|---------------|
| MediaTypeId          | varchar(20)  | <pk> not null |
| MediaTypeName        | varchar(255) | null          |
| PK_MSACMEDIATYPECODE |              |               |

| MsAcPriorityCode    |              |               |
|---------------------|--------------|---------------|
| PriorityCode        | varchar(10)  | <pk> not null |
| PriorityDesc        | varchar(255) | null          |
| PK_MSACPRIORITYCODE |              |               |

| MsAcResearchFieldCode    |              |               |
|--------------------------|--------------|---------------|
| ResearchFieldCode        | varchar(64)  | <pk> not null |
| ResearchFieldDesc        | varchar(255) | null          |
| PK_MSACRESEARCHFIELDCODE |              |               |

| MsAcStatusCode    |              |               |
|-------------------|--------------|---------------|
| StatusCode        | varchar(22)  | <pk> not null |
| StatusDesc        | varchar(255) | null          |
| PK_MSACSTATUSCODE |              |               |

**Figure D-2. Validation Data Information**

| MsAcUsrProfile        |               |          |
|-----------------------|---------------|----------|
| userId                | varchar(14)   | not null |
| homeDAAC              | varchar(3)    | not null |
| title                 | varchar(5)    | null     |
| firstName             | varchar(20)   | not null |
| middleInit            | char(1)       | null     |
| lastName              | varchar(20)   | not null |
| motherMaidenName      | varchar(20)   | null     |
| ECSAuthenticator      | varchar(32)   | not null |
| GTWYUsrType           | varchar(20)   | null     |
| eMailAddr             | varchar(255)  | null     |
| internetAffiliation   | varchar(14)   | null     |
| organization          | varchar(60)   | null     |
| projectName           | varchar(30)   | null     |
| affiliation           | varchar(16)   | null     |
| researchField         | varchar(64)   | null     |
| privilegeLevel        | varchar(10)   | null     |
| creationDate          | smalldatetime | null     |
| expirationDate        | smalldatetime | null     |
| mailAddrStreet1       | varchar(32)   | null     |
| mailAddrStreet2       | varchar(32)   | null     |
| mailAddrStreet3       | varchar(32)   | null     |
| mailAddrCity          | varchar(35)   | null     |
| mailAddrState         | varchar(20)   | null     |
| mailAddrZip           | varchar(15)   | null     |
| mailAddrCountry       | varchar(30)   | null     |
| mailAddrPhone         | varchar(22)   | null     |
| mailAddrFax           | varchar(22)   | null     |
| billContactTitle      | varchar(5)    | null     |
| billContactName_First | varchar(20)   | null     |
| billContactName_MI    | char(1)       | null     |
| billContactName_Last  | varchar(20)   | null     |
| billContactOrg        | varchar(60)   | null     |
| billEMailAddr         | varchar(255)  | null     |
| billAddrStreet1       | varchar(32)   | null     |
| billAddrStreet2       | varchar(32)   | null     |
| billAddrStreet3       | varchar(32)   | null     |
| billAddrCity          | varchar(35)   | null     |
| billAddrState         | varchar(20)   | null     |
| billAddrZip           | varchar(15)   | null     |
| billAddrCountry       | varchar(30)   | null     |
| billAddrPhone         | varchar(22)   | null     |
| billAddrFax           | varchar(22)   | null     |
| shipContactTitle      | varchar(5)    | null     |
| shipContactName_First | varchar(20)   | null     |
| shipContactName_MI    | char(1)       | null     |
| shipContactName_Last  | varchar(20)   | null     |
| shipContactOrg        | varchar(60)   | null     |
| shipEMailAddr         | varchar(255)  | null     |
| shipAddrStreet1       | varchar(32)   | null     |
| shipAddrStreet2       | varchar(32)   | null     |
| shipAddrStreet3       | varchar(32)   | null     |
| shipAddrCity          | varchar(35)   | null     |
| shipAddrState         | varchar(20)   | null     |
| shipAddrZip           | varchar(15)   | null     |
| shipAddrCountry       | varchar(30)   | null     |
| shipAddrPhone         | varchar(22)   | null     |
| shipAddrFax           | varchar(22)   | null     |
| asterCategory         | numeric(2)    | null     |
| darExpeditedData      | bit           | not null |
| nasaUser              | char(1)       | not null |
| category              | varchar(7)    | null     |
| accessPrivilege       | varchar(8)    | null     |

| MsAcUsrAudit |               |          |
|--------------|---------------|----------|
| userId       | varchar(12)   | not null |
| hostName     | varchar(30)   | not null |
| activityType | varchar(20)   | null     |
| DateTime     | smalldatetime | null     |
| location     | varchar(20)   | null     |
| status       | varchar(15)   | null     |
| program      | varchar(50)   | null     |

|                               |
|-------------------------------|
| ■ MsAcUsrAuditActivityTypeldx |
| ■ MsAcUsrAuditDateTimeldx     |
| ■ MsAcUsrAuditHostNameIdx     |
| ■ MsAcUsrAuditLocationIdx     |
| ■ MsAcUsrAuditProgramIdx      |
| ■ MsAcUsrAuditStatusIdx       |
| ■ MsAcUsrAuditUserldIdx       |

| role_to_cots |                  |          |
|--------------|------------------|----------|
| roleId       | varchar(15) <pk> | not null |
| cots_list    | varchar(255)     | null     |

|                          |
|--------------------------|
| ■ role_to_co_13287758411 |
|--------------------------|

**Figure D-3. User Data Information**

| EcMsDAACSites   |              |      |          |  |
|---|--------------|------|----------|--|
| DAAC_Id   | char(2)      | <pk> | not null |  |
| DAAC_Short  | char(3)      | <pk> | not null |  |
| DAAC_Long   | varchar(120) |      | not null |  |
| This_DAAC   | char(1)      |      | not null |  |
|  EcMsDAACSI_7367737321 |              |      |          |  |

| MsAcOpPrivilege |                        |      |          |
|-----------------|------------------------|------|----------|
| userId          | varchar(12)            | <pk> | not null |
| homeDAAC        | varchar(3)             |      | not null |
| █               | MsAcOpPriv_10887749861 |      |          |

#### ***Figure D-4. Site Information***

| EcDbDatabaseVersions   |              |      |          |
|------------------------|--------------|------|----------|
| EcDbSchemaVersionId    | smallint     | <pk> | not null |
| EcDbDropVersion        | char(64)     | <pk> | not null |
| EcDbDropDescription    | varchar(255) |      | null     |
| EcDbCurrentVersionFlag | char(1)      |      | null     |
| EcDbDatabaseName       | varchar(255) |      | null     |
| EcDbDropInstallDate    | datetime     |      | null     |
| EcDbSybaseVersion      | varchar(255) |      | null     |
| EcDbSybaseServer       | varchar(255) |      | null     |
| EcDbComments           | varchar(255) |      | null     |
| EcDbUpdateProcess      | varchar(255) |      | null     |

**Figure D-5. Database Versioning Information**